United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with the
Illinois Agricultural
Experiment Station

Soil Survey of McLean County, Illinois

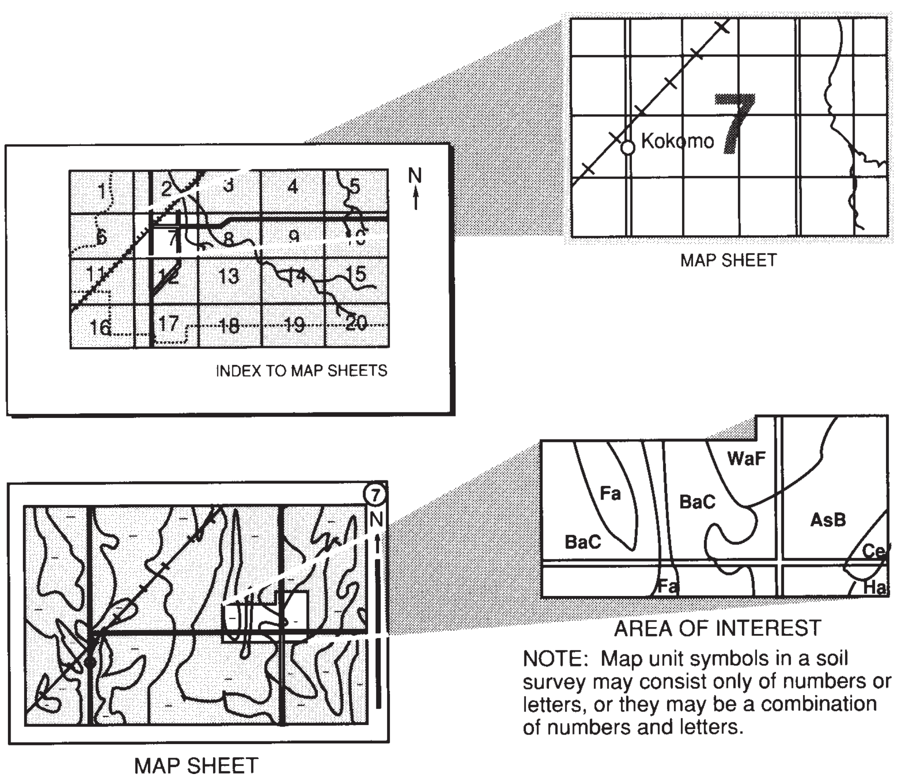
How To Use This Soil Survey

The **detailed soil maps** can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1990. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. Financial assistance was provided by the McLean County Board and the Illinois Department of Agriculture. The survey is part of the technical assistance furnished to the McLean County Soil and Water Conservation District.

Cover: Lake Dawson at Moraine View State Park.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

Contents

Issued 2004

Numerical Index to Map Units

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
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Soil Survey of
McLean County, Illinois

By Ronald D. Collman, Christopher C. Cochran, and Sam E. Werner,
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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

McLean County is in the central part of Illinois (fig. 1). It is bordered by Woodford, Livingston, Ford, Champaign, Piatt, DeWitt, Logan, and Tazewell Counties. It has a total area of 759,700 acres, or about 1,187 square miles. It is the largest county in Illinois. Bloomington is the county seat.

This soil survey updates the survey of McLean County published in 1998 (Windhorn, 1998). It provides more information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section provides general information about the survey area. It describes settlement and development, farming, physiography and drainage, and climate.

Settlement and Development

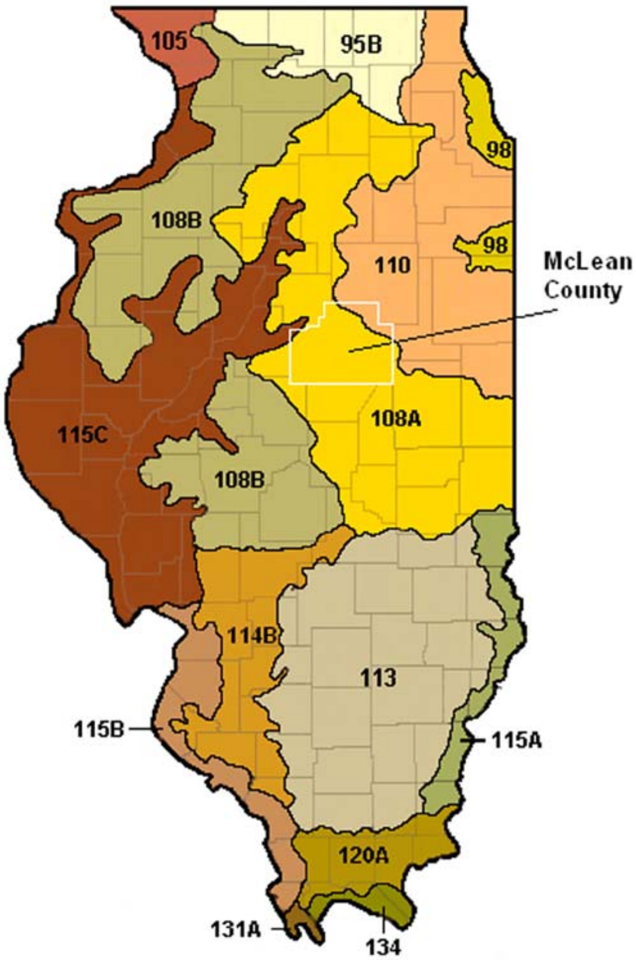
The survey area was inhabited as much as 10,000 years ago. Indian mounds are east of Heyworth and along the Mackinaw River in the Evergreen Lake area (Brigham, 1951).

The first European families settled in the area in 1822 (Tate, 1972). They settled in wooded areas near streams. The uplands were the first areas cleared for farming. Later, with the help of tile and dredging, the lower areas were drained and converted to agricultural uses.

McLean County was established in 1830. It was named for John McLean, the first representative to Congress from the State of Illinois (McLean Centennial Association, 1955).

As a result of the Swamp Land Act of 1850, the State of Illinois gave 23,793 acres of the lowest land in the area to McLean County (Hopkins et al., 1915). These lands were to be reclaimed by dredging and tiling. Because no workable plan could be decided on, however, the wetlands were sold. With the proceeds from this sale, the county provided $70,000 for the purchase of land north of Bloomington, where Normal University (Illinois State University) had its beginning.

In 2000, the population of the county was 150,433. The population increased 16.5 percent from 1990 to 2000. Most of the population growth has been in the



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain

98—Southern Michigan and Northern Indiana Drift Plain

105—Northern Mississippi Valley Loess Hills

108A and 108B—Illinois and Iowa Deep Loess and Drift

110—Northern Illinois and Indiana Heavy Till Plain

113—Central Claypan Area

114B—Southern Illinois and Indiana Thin Loess and Till Plain

115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes

120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys

131A—Southern Mississippi Valley Alluvium

134—Southern Mississippi Valley Silty Uplands

Figure 1.—Location of McLean County and the major land resource areas (MLRAs) in Illinois (USDA, 1981).

expanding Bloomington-Normal urban area (U.S. Department of Commerce, 2002).

Transportation systems in the county are well developed. They include five State highways, four U.S. highways, two interstate highways, several railroad lines, one municipal airport, and numerous paved county roads.

Farming

Farming is among the primary enterprises in the county. Corn and soybeans are the main crops. Grasses and legumes and winter wheat are also grown. Some of the farms raise livestock. Many of the animals are raised in confinement operations.

In 1982, the county had 2,126 farms, which made up 745,113 acres, or about 98 percent of the total land area (U.S. Department of Commerce, 1983). The average farm size was 350 acres, or about 50 acres larger than the average farm size for the State of Illinois. Cropland made up 701,075 acres. Of this total, 385,729 acres was used for corn and 287,205 acres for soybeans. The rest of the acreage was used for small grain or for pasture and hay.

The number of farms in McLean County dropped from 1,906 in 1987 to 1,475 in 1997. The farmland acreage dropped from 740,964 in 1987 to 696,575 acres in 1997. During this same time period, the acreage of corn increased from 277,851 to 333,205 acres, the acreage of soybeans increased from 287,083 to 312,613 acres, and the acreage of wheat increased from 96,969 to 122,233 acres. The total acreage of woodland was 7,803 in 1997. Of this acreage, 1,741 acres was pastured woodland (USDA, 1997).

In 1982, the county produced about 24,000 head of cattle and calves and sold about 134,000 hogs and pigs (U.S. Department of Commerce, 1983). In 1997,

the county sold 9,536 head of cattle and calves and sold about 150,790 hogs and pigs (USDA, 1997).

Physiography and Drainage

McLean County is mainly on a loess-covered till plain characterized by numerous terminal glacial moraines cutting diagonally across the county from northwest to southeast. Glacial ice, running water, and windblown deposits have all contributed to the landforms in the county. In general, nearly all of the ridges and knobs in the county have a glacial origin. These areas were then modified by the wearing down of hills and knobs and the filling in of lower areas with outwash sediments. Finally, a blanket of loess, which tends to smooth out landscape features, covered the entire landscape.

The Bloomington Moraine is one of the most prominent landform features in the county, especially in the eastern and northwestern parts. This moraine cuts through the center of the county. South of the moraine the landscape is mainly nearly level to sloping, except along the major streams, such as Kickapoo Creek and Sugar Creek. In these areas stream dissection resulted in more varied landscapes. In the northeastern part of the county, north of the moraine, the landscape is primarily gently sloping and sloping. In the extreme northwestern part of the county, the landscape is gently sloping to very steep.

One of the lowest points in the county is in the southwestern part where Sugar Creek flows out of the county. The elevation at this location is about 600 feet above sea level. One of the highest points is in the area due west of Moraine View State Park. This area is on the Bloomington Moraine and is at an elevation of about 926 feet above sea level (fig. 2).

In general, all surface water in McLean County eventually empties into the Illinois River. Water south of the Bloomington Moraine flows southwest in creeks, such as Kickapoo Creek, Sugar Creek, and Salt Creek. Water in the eastern part of the county flows east in the Sangamon River before emptying into the Illinois River. Water north of the Bloomington Moraine flows northwest in the Mackinaw River. Water in the extreme northeastern part of the county flows north toward the Vermilion River.

The county has about 2,792 acres of impounded water. Most of this water is in Lake Bloomington, Dawson Lake, Evergreen Lake, and Spin Lake. The rest is in smaller, privately owned ponds.

Climate

Prepared by the National Water and Climate Center, Natural Resources Conservation Service, Portland, Oregon.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Chenoa in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

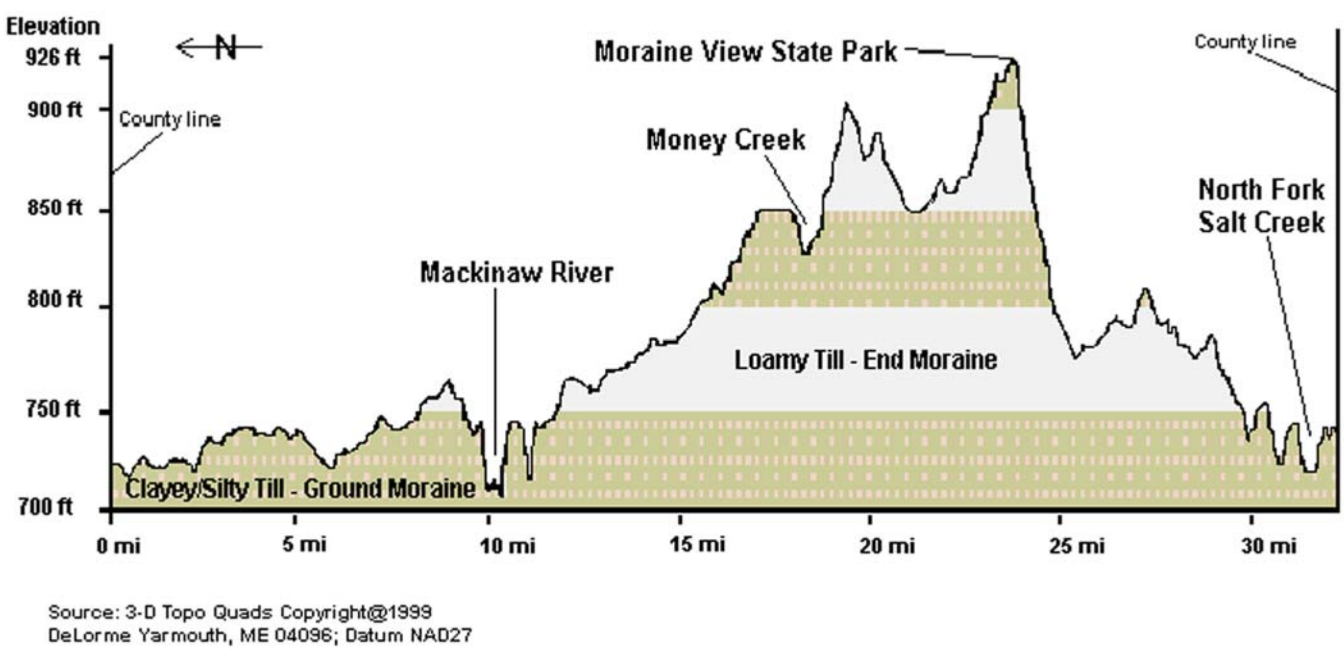


Figure 2.—Elevation cross section of McLean County.

In winter, the average temperature is 26.8 degrees F and the average daily minimum temperature is 18.7 degrees. The lowest temperature on record, which occurred at Chenoa on December 22, 1989, was -26 degrees. In summer, the average temperature is 72.9 degrees and the average daily maximum temperature is 84.2 degrees. The highest temperature, which occurred at Chenoa on August 17, 1988, was 103 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 34.52 inches. Of this, 20.78 inches, or about 60 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record was 8.20 inches at Chenoa on July 9, 1951. Thunderstorms occur on about 48 days each year, and most occur between May and August.

The average seasonal snowfall is 23.0 inches. The greatest snow depth at any one time during the period of record was 20 inches on March 11, 1960. On the average, 34 days of the year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12.0 inches on December 19, 1973.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 67 percent of the time possible in summer and 46 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 11 to 12 miles per hour, from November to April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the county. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage and the kinds of crops and native plants. To study the soil profile, which is the sequence of natural layers, or horizons in a soil, soil scientists use soil probes or spades. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the county occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the county. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landform.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior

of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

The soil survey information in this report is based on a review of field notes, laboratory data, and other data collected during the previous survey of McLean County (Windhorn, 1998). In addition, data from other soil surveys within Major Land Resource Areas 108A, 110, and 115C were reviewed and some resampling of selected soils to greater depths was conducted. The review of new and existing data over a wider area improves consistency in the identification, classification, and interpretations of soils on similar landscapes.

Digital orthophotographs used in this survey were taken early in spring between 1993 and 1995. Soil scientists studied U.S. Geological Survey topographic maps enlarged to a scale of 1:12,000 and geology maps to relate land and image features. Specific soil boundaries were drawn on the orthophotographs. Soil boundary lines were adjusted so that they would better coincide with the topographic map contour lines and tonal patterns on the orthophotographs.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Formation of the Soils

Soil forms through processes that act on deposited or accumulated geologic materials. The characteristics of the soil are determined by the physical and mineralogical composition of parent material; the climate under which the soil formed; the plant and animal life on and in the soil; the relief, or lay of the land; and the length of time that the forces of soil formation have acted on the parent material (Jenny, 1941).

The factors of soil formation are so closely interrelated in their effects on the soil that few generalizations can be made regarding the effects of any one factor unless the effects of the other factors are known. Many of the processes of soil formation are unknown.

The parent material affects the kind of soil profile that forms. Climate and plant and animal life are the active factors of soil formation. They act directly on the parent material, either in place or after it has been relocated by water, glaciers, or wind, and slowly change it into a natural body that has genetically related layers, or horizons. Relief can modify the effects of climate and plant and animal life. Finally, time is needed for transformation of the parent material into a soil profile that has clearly differentiated horizons.

Parent Material

Parent materials are determined by the geology of an area. They control the chemical and mineralogical composition of the soil at the beginning of soil formation. Weathering and biological activities gradually change the composition of the soil as it develops. Parent material includes all organic and inorganic material at the earth's surface. In places old weathered bedrock material and old soil material become parent material for the continuing soil development at the land surface (Brady, 1984; Broderson, 1994; Press and Siever, 1985).

The parent materials of the soils in McLean County are mainly associated directly with glaciers, meltwater, and wind of the Wisconsinan Glacial Stage and the Holocene (Willman and Frye, 1970). Although the parent materials are glacial in origin, their properties vary greatly, depending on the method of deposition. The dominant parent materials in McLean County are loess, glacial till, glacial outwash (including sand and gravel), alluvium, and colluvium.

Loess blankets the uplands of McLean County. It is silty material deposited by winds that carried it from major stream valleys and outwash plains. It consists of very uniform, calcareous, silt-sized particles. The major sources of the loess in the county are the valley of the Illinois River and many smaller stream valleys. Loess was initially deposited as sediments in rivers swollen with glacial meltwater. As the rivers dried up, these sediments were exposed. The predominantly westerly winds picked up the loess and transported it many miles. The loess covered the exposed glacial till and outwash with a layer that tended to thin with increasing distance from the source. Some soils in the county formed entirely in loess. In areas where the deposits are thinner, the soils formed in loess and in the underlying till or outwash. Osco and Ipava soils formed entirely in loess. Saybrook and Russell soils formed in loess and the underlying till.

Glacial till is material laid down directly by active glaciers. It is a mixture of materials that were picked up by the ice as it moved over the land. The size of particles ranges from clay to occasional boulders. The kinds of till exposed in McLean County are from distant as well as local sources. The rocks and minerals in the till from distant sources are granite, quartzite, diorite, galena, and pyrite. Shale and limestone indicate local sources. The small pebbles in glacial till generally have distinct edges and corners, indicating that they have not been subject to intense water action. The glacial till in McLean County was deposited during the Wisconsinan Stage.

Numerous recessional end moraines are evident in the county. The most notable of these is the Bloomington Moraine, which extends from Danvers Township, in the northwest part of the county, through Bloomington-Normal, and then to Cheneys Grove

Township, at the edge of the county line. The moraines are generally oriented from northwest to southeast, except for the Champaign Moraine, which extends north and south in the Bellflower area. The glacial till is generally loam, clay loam, or silt loam and is calcareous. It ranges from light pink to dark gray, depending on the source area of the till. Soils that formed in this parent material generally are gently sloping to very steep and are on ridgetops and side slopes. La Rose and Strawn are examples of soils that formed entirely in till. Many soils in Mclean County formed in loess and the underlying till. Dana and Saybrook soils are examples.

Ground moraines cover much of the county. They are generally flat to gently rolling plains and are made up of till material similar to that on the recessional and end moraines. Catlin and Flanagan soils are on ground moraines. The till in the northern part of the county typically has more clay than the previously mentioned till. Ashkum, Chenoa, and Varna are examples of soils that formed in till in this part of the county.

Throughout McLean County and east-central Illinois, the upper part of the till on ground moraines and below end and recessional moraines appears to be water worked and unconsolidated. As much as 2 feet of this washy till or ablation till overlies the more compacted till. It is sometimes correlated as outwash because of its interpretive properties.

Glacial outwash, including sand and gravel, is deposited by running water, either from melting glaciers or from streams. These deposits can occur in front of the margins of glacial moraines and in more concentrated areas in channels of the major stream valleys. These sediments vary greatly in particle size and composition from place to place. The size of deposited outwash particles varies, depending on the speed of the stream that carried them. The coarser particles were deposited first, and the finer particles were carried a greater distance by more slowly moving water. Penfield soils formed in outwash. Outwash deposits generally consist of strata of sandy loam, loam, and silt loam. In some areas where meltwater flowed rapidly, the deposits are coarser textured and gravel and coarse sand are more dominant. Examples of soils that formed in coarse textured outwash are Fox, Warsaw, and Lorenzo soils.

The outwash in McLean County is typically calcareous and has a low to moderate ability to hold water and nutrients available for plants. Some of the coarser deposits of outwash along the major streams are commercial sources of sand and gravel (fig. 3).

Alluvium is material deposited largely during periods of flooding. This material is generally silty because its source area is the loess-covered glacial till uplands. Alluvial areas occur along major streams throughout the county and also extend back into some upland drainageways. Stream alluvium can be eroded from anywhere upstream within the watershed. The streambanks in McLean County often expose the alluvial history of the stream.

Occasional or frequent flooding is still likely in most alluvial areas. Examples of alluvial soils are Lawson, Huntsville, and Sawmill soils. Aetna and Radford soils are common in areas where recent flooding has buried darker soil horizons.

Colluvium is local alluvium that has moved downslope. Peotone soils, which are in depressions, formed in colluvium, and Ashkum soils, which are on toeslopes, formed in colluvium and the underlying till.

Climate

Climate is important in the formation of soils. The county has a temperate, humid, continental climate that is essentially uniform throughout the county. Climate differences are too small to have caused any obvious differences in the soils locally.

Climate affects soil formation through its effects on weathering, plant and animal life, and erosion. Under the present climate, soil moisture fluctuates with precipitation and seasonal changes that vary from year to year (Brady, 1984; Broderson, 1994; Press and Siever, 1985; Windhorn, 1998). Water from rains and melting snow seeps slowly downward through the soil and causes physical and chemical changes. As the water moves through the profile, clay is transported from the surface layer to the subsoil, where it accumulates. Ipava soils are examples of soils in which this process has taken place. The water also dissolves minerals and moves them downward through the soil. This leaching process has removed calcium carbonate (free lime) from the upper layers of most of the soils in McLean County.

Heavy, untimely rains are harmful and destructive when they fall on soils that are exposed by farming activities. If the soil is partially frozen, early spring rains can cause extensive erosion because the infiltration of water is restricted early in spring.

Soil temperature affects soil formation. If the soil is frozen, rainfall runs off the soil and thus does not facilitate soil formation. Many of the processes of soil formation are halted or proceed at a slower rate when the soil is frozen.

Climate influences the kind and extent of plant and animal life. The climate in McLean County has favored tall grass prairie and deciduous hardwood forests. It has also favored animal life, which decomposes dead plants and animals and incorporates them into the soil.

Figure 3.—Outwash that is being mined for gravel in an area of Warsaw loam, 0 to 2 percent slopes.

Plant and Animal Life

Soils are greatly affected by the type of vegetation under which they formed. One of the most easily recognized examples of the effect of vegetation on soil formation is the difference between prairie soils and forest soils. The chief contribution of vegetation and biological processes is the addition of organic matter and nitrogen to the soil. The kind of organic material in the soil depends primarily on the kind of native plants that grew on the soil. The remains of these plants accumulate in or on the surface, decay, and eventually become organic matter, or humus. The roots of the plants provide channels for the downward movement of water through the soil and also add organic matter as they decay.

The native vegetation in McLean County consisted mainly of tall prairie grasses and deciduous hardwood trees. At the time of early settlement, most of the survey area supported prairie grasses. These grasses have many fine, fibrous roots that add large amounts of organic matter to the soil as they die and decay, especially where they are concentrated near the surface. Decomposition of plant materials produces humus-rich soils that have a high level of fertility and a high water-holding capacity. Excess wetness in soils slows the rate of decomposition, and the organic matter accumulates over time. Soils that formed under prairie vegetation have a thick, black or dark brown surface layer. The prairie soils in McLean County are generally on the broad upland divides between streams (fig. 4). The thickness of the surface layer varies greatly, depending on landscape position. Soils that formed on ridgetops and shoulders, such as Dana and Saybrook soils, have a thinner dark surface layer than soils in nearly level areas, such as Ipava, Flanagan, Muscatune, Raub, and Lisbon soils. Some soils in depressions have a black surface layer that is more than 24 inches thick. Peotone soils are an example.

About 6 percent of the county supported timber vegetation at the time of early settlement. The deciduous hardwood forests contributed organic matter to the soil mainly in the form of leaf litter. The

Figure 4.—Drummer and Flanagan soils on broad upland divides between streams.

soils that formed under trees have a thinner, lighter colored surface layer and subsurface layer than the soils that formed under grasses. Organic matter in forests accumulates at the surface, and the humus that is produced is more acidic than grassland humus. These acids percolate into the soil and promote the break down of minerals in the soil. This acidification process increases the rate of leaching and translocation, which lower fertility and causes clay-sized particles to accumulate in lower layers. Where this process is active for a long time, it produces an obvious eluvial horizon that has a bleached or ashy appearance. This layer can form a crust when dry. The crust can impede the downward movement of water. The light colored subsurface layer and the lower content of organic matter in the surface layer result in the characteristic white appearance of the soils that formed in wooded areas. In general, these soils are on narrow upland divides between streams or on the side slopes bordering streams. Keomah, Rozetta, Mayville, Birkbeck, and Sabina soils formed under timber vegetation.

About 4 percent of the county supported mixed prairie and timber vegetation at the time of early settlement. Atterberry and Kaneville soils formed under mixed vegetation in the uplands. Most of the soils on flood plains formed under a mixture of trees and grasses, especially in the larger valleys. Most of these soils are dark because of a high content of organic matter, but the dark colors are related more to the color of the sediments deposited than to the native vegetation. Lawson, Huntsville, and Sawmill are examples of soils that formed on flood plains.

Micro-organisms, earthworms, insects, and large burrowing animals that live in or on the soil have affected soil formation. Bacteria and fungi help to break down and decompose dead plants and animals and change them into humus. Burrowing animals, such as earthworms, crayfish, cicadas, mice, and ground squirrels, help to incorporate the humus into the soil. Humus is very important in the formation of soil structure. It also affects the tilth of the soil. In McLean County, evidence of the burrowing activities of these insects and animals is most noticeable in wet soils, such as Peotone, Sable, Drummer, Hartsburg, and Harpster soils. In some areas of these soils, crayfish and earthworms have constructed “chimneys” of soil material on the surface as tunnels were formed.

Evidence of human activity in the survey area dates back to approximately 10,000 years before present. This period coincides with the ice retreat and meltwaters of the last major glaciation that covered

northeastern Illinois. Humans did not have a significant effect on the soils or the environment until the arrival of European settlers in North America. During the late 1800s and early 1900s, areas of land were cleared with the moldboard plow for pasture and row crops. The result of these activities significantly increased the extent of erosion and decreased the content of organic matter and biological activity in the soil. Many soils lost valuable topsoil. The lighter colored subsoil of these soils was exposed. In places the subsoil was clayey and difficult to work (Brady, 1984; Windhorn, 1998).

Relief

Relief, or local changes in elevation, has had a marked influence on the soils in McLean County through its effect on runoff, water infiltration, erosion, and natural soil drainage. Slopes in McLean County range from 0 to 50 percent. The landscape is changing slowly but constantly. Initially, many of the landforms and features could be attributed directly to their mode of deposition—that is, the glaciers or the glacial meltwater. Once the glaciers began to recede, depositional and erosional forces started shaping the landscape, creating the landforms that are evident today. In general, map unit boundaries follow landform and landform component boundaries.

The landform shape and size play a role in soil formation. The shape and slope of a landform affect drainage. Level areas or depressions generally are characterized by poor natural drainage, forcing water to pond or percolate into the soil (fig. 5). The soils in depressions in McLean County have a higher content of clay in the surface layer and are ponded. The soils on gentle slopes, such as Ipava and Camden soils, are characterized by more water infiltration, less erosion, and stronger, deeper development than the soils on steeper slopes or soils that are wet and ponded. Rounded summits and shoulder slopes are characterized by better drainage, causing more water to flow downhill. Increased runoff increases the extent of erosion and further shapes the landscape. The soils on the steeper slopes commonly are more eroded and less well developed than the less sloping soils.

Figure 5.—Water standing in a ponded area of Drummer silty clay loam, 0 to 2 percent slopes.

Hennepin and Strawn soils on steep slopes along stream valleys and are examples of soils with little or shallow development (Herzog, 1994; Windhorn, 1998).

Time

The amount of time that material has been exposed to the soil-forming processes and the rate of development determine the stage of development. The soil-forming cycle is associated with geologic events, such as glaciation and flooding, that lead to deposition, weathering, and erosion cycles.

The age of material can be determined by correlation to similar materials of known age or by some other dating process. Artifacts of known age as well as fossil pollen found in the soil can give clues to the approximate time of formation. Radiocarbon dating of organic material is commonly used to determine the ages of materials up to about 50,000 years old.

Soil development progresses with time. The changes with time are expressed in morphological features and are commonly interpreted as the result of time. Changes in color and soil structure are the most apparent features. The stronger the features are expressed, the older the soil is likely to be. However, even though a parent material may have been formed at one time, the soils at different locations that have different environmental histories develop at different rates and show differences in soil structure, color, and other properties. In general, more weathering produces a more mature soil. Even though materials may be deposited at the same time, they may have developed at different rates.

The youngest soils are weakly developed and are in areas where deposition of parent material has occurred periodically during recent flooding along streams. Lawson soils show weak profile development because they are on flood plains that frequently receive alluvial sediments. Other young soils are along footslopes in colluvial areas. These soils have characteristic layering that is related to the different events of sedimentation. The stage of development in these soils is related to the age of the parent material in which the soils formed and the time of the deposition. Birkbeck soils show more evidence of horizonation because the loess and till parent materials have been in place a much longer time than the sediments of alluvial soils.

Nearly all the exposed soils in McLean County are less than 12,600 years old. This age coincides with the cessation of significant loess accumulation (Follmer, 1979; Johnson and Follmer, 1989).

The rate of the development of soils depends on parent material, biological activity, climate, and relief. All soil profiles reveal evidence of their stage of development, but appearance does not always indicate the age of the soil in terms of years.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Detailed Soil Map Units

In this section each soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated detailed soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. In some instances the typical pedon for the series is located outside McLean County. The selection of typical pedons is based on the range of characteristics of the series as it occurs throughout a particular major land resource area (MLRA). The Varna series, for example, is common in MLRA 110 (Northern Illinois and Indiana Heavy Till Plain), which includes most of northeastern Illinois. The typical pedon for the Varna series is located in Ford County, Illinois. The soil properties of this pedon are representative of the Varna soils that occur not only in Ford County but also in McLean County and other counties within MLRA 110.

The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. Miscellaneous surface features that are too small or narrow to be mapped at the scale used in the survey are identified by a special symbol. “Gravelly spot” is an example of a miscellaneous surface feature that is too small (less than 3 acres) to be mapped.

The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations affecting specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. The name of a soil phase commonly indicates a feature that affects use or management. For example, Birkbeck silt loam, 2 to 5 percent slopes, eroded, is a phase of the Birkbeck series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils are somewhat similar in all areas. Catlin-Saybrook silt loams, 2 to 5 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. An example of an undifferentiated group in this survey area is Miami and Hennepin soils, 18 to 35 percent slopes.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Aetna Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Aetna silt loam, 0 to 2 percent slopes, occasionally flooded, on a nearly level slope, in a cultivated field, at an elevation of 712 feet above mean sea level, in McLean County, Illinois, 780 feet north and 590 feet east of the southwest corner of sec. 23, T. 22 N., R. 2 E.; USGS Heyworth, Illinois, topographic quadrangle; latitude 40 degrees 20 minutes 36.3 seconds north and longitude 88 degrees 57 minutes 25.1 seconds west; UTM Zone 16T 0333784E 4467500N; NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure in the upper part and weak thin platy structure in the lower part; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; abrupt smooth boundary.

Bg—8 to 22 inches; dark grayish brown (10YR 4/2), stratified silt loam and silty clay loam; moderate medium subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common medium faint brown (10YR 5/3) masses that have accumulated iron and manganese and are in the matrix; neutral; clear smooth boundary.

2Ab1—22 to 34 inches; black (10YR 2/1) silt loam; moderate coarse subangular blocky structure; friable; few medium distinct brown (10YR 4/3) masses that have accumulated iron and manganese and are in the matrix; slightly alkaline; clear smooth boundary.

2Ab2—34 to 41 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate coarse subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few medium distinct brown (10YR 5/3) masses that have accumulated iron and manganese and are in the matrix; few medium prominent iron and manganese stains and concretions throughout; slightly alkaline; clear smooth boundary.

2Bgb—41 to 46 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak coarse subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) and dark yellowish brown

(10YR 4/4) masses that have accumulated iron and manganese and are in the matrix; few medium prominent iron and manganese stains and concretions throughout; slightly alkaline; clear smooth boundary.

2BCgb—46 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; in the matrix, many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and dark yellowish brown (10YR 4/4) masses that have accumulated iron and manganese; common medium prominent iron and manganese stains and concretions throughout; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 18 to 35 percent
Depth to carbonates: More than 60 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid or neutral

Bw or Bg horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid or neutral

2Ab1 and 2Ab2 horizons:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly alkaline or neutral

2Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly alkaline or neutral

2BC or 2C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 to 4
Texture of the fine-earth fraction—silty clay loam or clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—neutral or slightly alkaline

8720A—Aetna silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Aetna and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have less organic matter in the substratum

Dissimilar soils:
- Soils that are not subject to flooding
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Aetna Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 0.5 foot to 2.0 feet, Jan.–May
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low

Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Aetna—2w
Prime farmland status: Aetna—prime farmland where drained
Hydric soil status: Aetna—not hydric

Andres Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Andres silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 633 feet above mean sea level, in Livingston County, Illinois, 1,525 feet south and 510 feet east of the northwest corner of sec. 27, T. 30 N., R. 8 E.; USGS Campus, Illinois, topographic quadrangle; latitude 41 degrees 02 minutes 53 seconds north and longitude 88 degrees 18 minutes 16 seconds west; UTM Zone 16T 0390370E 4544699N; NAD 27:

Ap—0 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

BA—11 to 14 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt—14 to 19 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine dark iron and manganese concretions throughout; neutral; clear smooth boundary.

Btg1—19 to 26 inches; grayish brown (10YR 5/2) clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint gray (10YR 5/1) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; few fine dark iron and manganese concretions throughout; neutral; clear smooth boundary.

Btg2—26 to 36 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common faint dark gray (10YR 4/1) clay films on faces of peds; common fine faint gray (10YR 5/1) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine dark iron and manganese concretions throughout; neutral; clear smooth boundary.

2Bt—36 to 50 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; many medium prominent gray (N 5/) iron depletions in the matrix; few fine dark iron and manganese concretions throughout; 5 percent rock fragments; very slightly effervescent; slightly alkaline; clear smooth boundary.

2C—50 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; many medium prominent gray (N 5/) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 5 percent rock fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 24 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam, loam, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to slightly alkaline

2Bt or 3Bt horizon:
Hue—10YR, 2.5Y, or 5Y

Value—3 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

2C or 3C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

293A—Andres silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Andres and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil
- Soils that have a clayey subsoil

Dissimilar soils:
- The poorly drained Ashkum soils in swales
- The moderately well drained Symerton soils on rises

Properties and Qualities of the Andres Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Andres—1
Prime farmland status: Andres—prime farmland in all areas
Hydric soil status: Andres—not hydric

Arrowsmith Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Arrowsmith silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 774 feet above mean sea level, in McLean County, Illinois, about 5.5 miles south and 2.5 miles west of Arrowsmith, 650 feet south and 1,350 feet east of the northwest corner of sec. 18, T. 22 N., R. 5 E.; USGS Farmer City, Illinois, topographic quadrangle; latitude 40 degrees 22 minutes 02.9 seconds north and longitude 88 degrees 40 minutes 59.8 seconds west; UTM Zone 16T 0357085E 4469697N; NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure; very friable; neutral; abrupt smooth boundary.
A—8 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure; friable; neutral; abrupt smooth boundary.
Bt1—12 to 17 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; neutral; clear smooth boundary.
Bt2—17 to 23 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown

(2.5Y 5/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; neutral; clear smooth boundary.

Bt3—23 to 30 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; many fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; slightly alkaline; abrupt smooth boundary.

BCk—30 to 39 inches; light olive brown (2.5Y 5/4) silt loam; weak coarse subangular blocky structure; friable; very few faint dark grayish brown 2.5Y 4/2) clay films lining pores; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; many fine and medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions in the matrix; few medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; strongly effervescent; moderately alkaline; gradual smooth boundary.

Ck—39 to 60 inches; light olive brown (2.5Y 5/4) silt loam; massive; friable; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; many medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions in the matrix; few medium rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 26 to 33 percent
Depth to carbonates: 25 to 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—neutral or slightly alkaline

BC horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly alkaline or moderately alkaline

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly alkaline or moderately alkaline

715A—Arrowsmith silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Footslopes or summits

Map Unit Composition

Arrowsmith and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that do not have excess lime within a depth of 40 inches
- Soils that have a clayey subsoil

Dissimilar soils:
- The poorly drained Hartsburg and Sable soils in swales
- The moderately well drained Elkhart soils on shoulders above the Arrowsmith soil

Properties and Qualities of the Arrowsmith Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Arrowsmith—1
Prime farmland status: Arrowsmith—prime farmland in all areas
Hydric soil status: Arrowsmith—not hydric

Ashkum Series

Taxonomic classification: Fine, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Ashkum silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 705 feet above mean sea level, in Will County, Illinois, 2,030 feet east and 96 feet south of the northwest corner of sec. 22, T. 34 N., R. 11 E.; USGS Manhattan, Illinois, topographic quadrangle; latitude 41 degrees 25 minutes 28 seconds north and longitude 87 degrees 57 minutes 24 seconds west; UTM Zone 16T 0519100E 4603300N; NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; many very fine roots; neutral; clear smooth boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

BAg—12 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine roots; many distinct continuous black (10YR 2/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese concretions throughout; neutral; clear smooth boundary.

Bg1—18 to 29 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear wavy boundary.

2Bg2—29 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese concretions throughout; in the matrix, common fine and medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and common fine and medium distinct brown (10YR 5/3) masses that have accumulated iron and manganese; common fine and medium distinct gray (5Y 5/1) iron depletions in the matrix; 8 percent gravel; neutral; gradual wavy boundary.

2BCg—49 to 54 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese concretions throughout; in the matrix, common fine and medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and faint brown (10YR 5/3) masses that have accumulated iron and manganese; common fine and medium faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—54 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; in the matrix, common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and common fine and medium faint brown (10YR 5/3) masses that have accumulated iron and manganese; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 44 percent
Depth to carbonates: 40 to 60 inches

Ap and A horizons:
Hue—10YR, 2.5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid or neutral

2B and 2BC horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral or slightly alkaline

2C horizon:
Hue—2.5Y, 5Y, or 5GY
Value—4 to 6
Chroma—0 to 6
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

232A—Ashkum silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines or end moraines
Position on landform: Toeslopes

Map Unit Composition

Ashkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have less clay in the surface layer and subsoil

Dissimilar soils:
- The somewhat poorly drained Elliott soils on slight rises
- The moderately well drained Varna soils on backslopes and summits above the Ashkum soil

Properties and Qualities of the Ashkum Soil

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 7.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Ashkum—2w
Prime farmland status: Ashkum—prime farmland where drained
Hydric soil status: Ashkum—hydric

Atterberry Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Atterberry silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 666 feet above mean sea level, in Bureau County, Illinois, about 3 miles south and 1 mile east of Princeton, 1,650 feet north and 1,120 feet east of the southwest

corner of sec. 34, T. 16 N., R. 9 E.; USGS Princeton South, Illinois, topographic quadrangle; latitude 41 degrees 19 minutes 31.2 seconds north and longitude 89 degrees 26 minutes 46.1 seconds west; UTM Zone 16T 0295276E 4577548N; NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

E—9 to 13 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few fine roots; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

EB—13 to 17 inches; brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few fine roots; common distinct brown (10YR 4/3) clay films and common distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine rounded dark masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.

Bt—17 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many distinct dark grayish brown (10YR 4/2) clay films and common distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine rounded masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

Btg1—24 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films and few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine rounded dark masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

Btg2—33 to 40 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films and few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; many distinct very dark grayish brown (10YR 3/2) organo-clay films lining pores; many fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine rounded dark masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

Btg3—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct very dark grayish brown (10YR 3/2) organo-clay films lining pores; many fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; strongly acid; clear smooth boundary.

BCg—48 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct very dark grayish brown (10YR 3/2) organo-clay films lining pores; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; moderately acid.

Range in Characteristics

Content of clay in the control section: 25 to 34 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightely acid or neutral

EB horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4

Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly alkaline

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

61A—Atterberry silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Atterberry and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have excess lime within a depth of 40 inches

Dissimilar soils:
- The well drained Rozetta soils on rises above the Atterberry soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Atterberry Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Atterberry—1
Prime farmland status: Atterberry—prime farmland where drained
Hydric soil status: Atterberry—not hydric

Birkbeck Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Birkbeck silt loam, 2 to 5 percent slopes, on a 2 percent slope, in a sparsely wooded area, at an elevation of 680 feet above mean sea level, in Macon County, Illinois, about 7 miles northeast of Decatur, 1,600 feet east and 750 feet south of the northwest corner of sec. 25, T. 17 N., R. 3 E.; USGS Argenta, Illinois, topographic quadrangle; latitude 39 degrees 54 minutes 25.3 seconds north and longitude 88 degrees 48 minutes 59.7 seconds west; UTM Zone 16S 0344720E 4418800N; NAD 27:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate very fine granular; friable; slightly acid; abrupt smooth boundary.
E—4 to 9 inches; brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; few distinct gray (10YR 6/1 dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure parting to moderate very fine granular; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common distinct light gray (10YR 7/1 dry) silt coatings on faces of peds; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout: moderately acid; clear smooth boundary.
Bt2—13 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly

cemented iron and manganese nodules throughout; moderately acid; clear smooth boundary.

Bt3—24 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout; moderately acid; clear smooth boundary.

Bt4—29 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses that have accumulated iron and manganese and are in the matrix; slightly acid; gradual smooth boundary.

Bt5—42 to 54 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; in the matrix, common fine distinct light yellowish brown (2.5Y 6/4) masses that have accumulated iron and manganese and few medium prominent strong brown (7.5YR 5/6) masses that have accumulated iron; neutral; clear smooth boundary.

2Bt6—54 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout; common fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; in the matrix, common medium distinct light yellowish brown (2.5Y 6/4) masses that have accumulated iron and manganese and common fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron; neutral; gradual smooth boundary.

2C—60 to 68 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine irregular black (7.5YR 2.5/1) weakly cemented iron and manganese nodules throughout; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; in the matrix, common fine faint light yellowish brown (2.5Y 6/4) masses that have accumulated iron and manganese and common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron; strongly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent

Depth to carbonates: More than 40 inches

Ap or A horizon:

Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon (if it occurs):

Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:

Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2Bt and 2BC horizons:

Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—loam, clay loam, silty clay loam, or silt loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—loam, clay loam, silty clay loam, or silt loam

Content of rock fragments—0 to 15 percent, by volume
Reaction—neutral to moderately alkaline

233B—Birkbeck silt loam, 2 to 5 percent slopes

Setting

Landform: End moraines or ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Birkbeck and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Sable and Drummer soils in swales

Properties and Qualities of the Birkbeck Soil

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 70 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Birkbeck—2e
Prime farmland status: Birkbeck—prime farmland in all areas
Hydric soil status: Birkbeck—not hydric

233B2—Birkbeck silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Birkbeck and similar soils: 96 percent
Dissimilar soils: 4 percent

Minor Components

Similar soils:
- Soils that have a clayey subsoil
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Sable and Drummer soils in swales

Properties and Qualities of the Birkbeck Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 70 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Birkbeck—2e
Prime farmland status: Birkbeck—prime farmland in all areas

Hydric soil status: Birkbeck—not hydric

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Birkbeck and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Birkbeck Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 70 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Birkbeck—3e
Prime farmland status: Birkbeck—not prime farmland
Hydric soil status: Birkbeck—not hydric

Brenton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Brenton silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 768 feet above mean sea level, in McLean County, Illinois, 525 feet east and 1,620 feet south of the northwest corner of sec. 15, T. 22 N., R. 6 E; USGS Bellflower, Illinois, topographic quadrangle; latitude 40 degrees 21 minutes 52.8 seconds north and longitude 88 degrees 30 minutes 54.8 seconds west; UTM Zone 16T 0371340E 4469120N; NAD 27:

Ap1—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine roots throughout; moderately acid; abrupt smooth boundary.

Ap2—8 to 14 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; common very fine roots throughout; few very fine tubular pores; moderately acid; abrupt smooth boundary.

Bt1—14 to 17 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots along faces of peds; few very fine tubular pores; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese concretions and stains throughout; moderately acid; clear smooth boundary.

Bt2—17 to 22 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; friable; common very fine and few fine roots along faces of peds; few very fine and fine tubular pores; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few fine prominent dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; moderately acid; clear smooth boundary.

Bt3—22 to 28 inches; olive brown (2.5Y 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; friable; common very fine and few fine

roots along faces of peds; few very fine and fine tubular pores; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; in the matrix, few fine prominent grayish brown (10YR 5/2) iron depletions and distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese; few fine prominent iron and manganese concretions and stains throughout; moderately acid; clear smooth boundary.

Bt4—28 to 33 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure parting to strong medium subangular blocky; friable; common very fine and few fine roots along faces of peds; few very fine tubular pores; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; moderately acid; clear smooth boundary.

2Bt5—33 to 45 inches; olive brown (2.5Y 4/4), stratified loam and fine sandy loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots along faces of peds; few very fine tubular pores; many distinct very dark grayish brown (2.5Y 3/2) organo-clay films lining root channels and common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine and medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent iron and manganese concretions and stains throughout; slightly acid; clear smooth boundary.

2BC—45 to 54 inches; light olive brown (2.5Y 5/6) and light brownish gray (2.5Y 6/2) loam; weak medium subangular blocky structure; friable; few very fine roots along faces of peds; few very fine tubular pores; many distinct very dark grayish brown (2.5Y 3/2) organo-clay films lining root channels and pores; common fine prominent iron and manganese concretions and stains throughout; neutral; clear smooth boundary.

2Cg1—54 to 69 inches; gray (2.5Y 6/1) silt loam; weak thick and very thick platy rock structure; very friable; few very fine roots throughout; many very fine horizontal tubular pores between plates and few very fine vertical tubular pores through the plates; many very dark grayish brown (2.5Y 3/2) organo-clay films lining root channels and pores; common fine and medium prominent light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; common very fine and fine prominent black (10YR 2/1) masses that have accumulated manganese and are in the matrix; slightly effervescent; neutral; clear smooth boundary.

2Cg2—69 to 80 inches; gray (2.5Y 6/1) silt; massive; very friable; few very fine roots throughout; few very fine tubular pores; common fine and medium prominent yellowish brown (10YR 5/6 and 5/8) masses that have accumulated iron and are in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 33 percent

Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

2Bt and 2BC horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—stratified loam, fine sandy loam, sandy loam, or silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—2.5Y, 10YR, or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silt with strata of sandy loam or loam in some pedons
Content of rock fragments—0 to 5 percent, by volume

Reaction—neutral to moderately alkaline

149A—Brenton silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Footslopes or summits

Map Unit Composition

Brenton and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils with a silty subsoil that extends to a depth of 60 or more inches
- Soils that have more than 15 percent gravel in the substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Brenton Soil

Parent material: Silty loess over loamy outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Brenton—1
Prime farmland status: Brenton—prime farmland in all areas
Hydric soil status: Brenton—not hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 2 to 5 percent slopes, eroded, on a 2 percent slope, in a cultivated field, at an elevation of 717 feet above mean sea level, in McLean County, Illinois, 410 feet west-northwest of Patton Creek, 1,890 feet north and 350 feet east of the southwest corner of sec. 21, T. 25 N., R. 4 E.; USGS Merna, Illinois, topographic quadrangle; latitude 40 degrees 36 minutes 30.4 seconds north and longitude 88 degrees 45 minutes 47.6 seconds west; UTM Zone 16T 0350831E 4496576N; NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; moderate fine granular structure; friable; many very fine and few fine roots; slightly acid; abrupt smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; many very fine and few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.

Bt2—15 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; moderately acid; clear smooth boundary.

Bt3—24 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine faint brown (10YR 5/3) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; moderately acid; clear smooth boundary.

2Bt4—31 to 41 inches; yellowish brown (10YR 5/4) loam; moderate medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine faint brown (10YR 5/3) iron depletions in the matrix; common fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 3 percent gravel; strongly acid; gradual smooth boundary.

2Bt5—41 to 50 inches; dark yellowish brown (10YR 4/4) clay loam; moderate coarse subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; in the matrix few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and brown (10YR 5/3) masses that have accumulated iron and manganese; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; neutral; gradual smooth boundary.

2BCt—50 to 60 inches; dark yellowish brown (10YR 4/4) sandy clay loam with strata of sandy loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine distinct brown (10YR 5/3) iron depletions in the matrix; 1 percent gravel; slightly effervescent; neutral.

Range in Characteristics

Content of clay in the control section: 22 to 35 percent
Depth to carbonates: More than 60 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

BE horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2Bt and 2BC horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam, clay loam, silt loam, silty clay loam, or sandy clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—strongly acid to neutral

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—stratified sandy loam, loam, or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—strongly acid to neutral

134B2—Camden silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Backslopes or summits

Map Unit Composition

Camden and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have more than 10 percent gravel in the substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Camden Soil

Parent material: Silty loess over loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Camden—2e
Prime farmland status: Camden—prime farmland in all areas
Hydric soil status: Camden—not hydric

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains or stream terraces
Position on landform: Shoulders or backslopes

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have more than 10 percent gravel in the substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Camden—3e
Prime farmland status: Camden—not prime farmland
Hydric soil status: Camden—not hydric

Catlin Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Catlin silt loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 791 feet above mean sea level, in McLean County, Illinois, 330 feet east and 70 feet south of the northwest corner of sec. 11, T. 23 N., R. 1 E.; USGS Bloomington West, Illinois, topographic quadrangle; latitude 40 degrees 28 minutes 22.3 seconds north and longitude 89 degrees 4 minutes 34.5 seconds west; UTM Zone 16T 0323989E 4482099N; NAD 27:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; friable: neutral; clear smooth boundary.
AB—11 to 16 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; moderate fine subangular blocky structure; friable; neutral; abrupt smooth boundary.
Bt1—16 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; strong fine and medium angular blocky structure; friable; common distinct dark yellowish brown (10YR 3/4) clay films on faces of peds; few fine prominent stains of iron and manganese throughout; slightly acid; clear smooth boundary.
Bt2—26 to 41 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak medium and coarse subangular blocky structure; friable; common distinct brown (10YR 4/3) and dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron and manganese throughout; neutral; clear smooth boundary.

2Bt3—41 to 45 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; friable; very few faint very dark grayish brown (10YR 3/2) organo-clay films lining root channels; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron and manganese throughout; 2 percent fine gravel; very slightly effervescent; moderately alkaline; clear smooth boundary.

2C—45 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine and medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent stains of iron and manganese throughout; few fine prominent masses of carbonate accumulation throughout; 2 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 40 to 60 inches

Ap, A, and AB horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

2B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam, loam, silty clay loam, or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to moderately alkaline

2BC or 2C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—loam, clay loam, or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

Taxadjunct Features

Catlin silt loam, 2 to 5 percent slopes, eroded, and Catlin silt loam, 5 to 10 percent slopes, eroded, are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. In addition, Catlin silt loam, 2 to 5 percent slopes, eroded, is slightly wetter. These differences, however, do not significantly affect the use, management, or interpretations of the soils. Catlin silt loam, 2 to 5 percent slopes, eroded, is a fine-silty, mixed, superactive, mesic Aquollic Hapludalf. Catlin silt loam, 5 to 10 percent slopes, eroded, is a fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf.

171B—Catlin silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or shoulders

Map Unit Composition

Catlin and similar soils: 94 percent
Dissimilar soils: 6 percent

Similar soils:
- Soils that are shallower to a loamy substratum
- Soils that have a thinner surface layer because of erosion

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate

Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Catlin—2e
Prime farmland status: Catlin—prime farmland in all areas
Hydric soil status: Catlin—not hydric

171B2—Catlin silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Catlin and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that are shallower to a loamy substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 1.5 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Catlin—2e
Prime farmland status: Catlin—prime farmland in all areas
Hydric soil status: Catlin—not hydric

171C2—Catlin silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Catlin and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are shallower to a loamy substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Catlin—3e
Prime farmland status: Catlin—not prime farmland
Hydric soil status: Catlin—not hydric

893B—Catlin-Saybrook silt loams, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Catlin and similar soils: 45 percent
Saybrook and similar soils: 35 percent
Dissimilar soils and miscellaneous areas: 20 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have a slope of 5 to 7 percent

Dissimilar components:
- Orthents, loamy, in areas that are used for landscaping
- Urban land in areas that are built up
- The poorly drained Drummer soils in swales
- Soils that have a slope of more than 7 percent

Properties and Qualities of the Catlin Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Properties and Qualities of the Saybrook Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Catlin and Saybrook—2e
Prime farmland status: Catlin and Saybrook—prime farmland in all areas
Hydric soil status: Catlin and Saybrook—not hydric

Chenoa Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Chenoa silty clay loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 724 feet above mean sea level, in Livingston County, Illinois, 369 feet south and 225 feet west of the northeast corner of sec. 32, T. 27 N., R. 4 E.; USGS Flanagan South, Illinois, topographic quadrangle; latitude 40 degrees 46 minutes 7.9 seconds north and longitude 88 degrees 46 minutes 36.4 seconds west; UTM Zone 16T 0350037E 4514410N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

BA—10 to 15 inches; dark brown (10YR 3/3) silty clay loam, grayish brown (10YR 5/2) dry; moderate very fine subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—15 to 20 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct black (10YR 2/1) organic coatings on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt2—20 to 28 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; moderately acid; clear smooth boundary.

2Bt3—28 to 37 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure; friable; few very fine roots; common faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium prominent gray (N 6/) iron depletions in the matrix; common medium distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt4—37 to 42 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure; friable; few very fine roots; few faint grayish brown (2.5Y 5/2) clay films on faces of peds; common medium prominent gray (N 6/) iron depletions in the matrix; common medium distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2BCk—42 to 47 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; friable; few very fine roots; many medium prominent gray (N 6/) iron depletions in the matrix; common medium distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; few fine prominent white (N 8/) masses of carbonate accumulation throughout; 1 percent gravel; violently effervescent; moderately alkaline; clear smooth boundary.

2Ck—47 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few very fine roots; many medium prominent gray (N 6/) iron depletions in the matrix; many medium distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; few fine prominent white (N 8/) masses of carbonate accumulation throughout; 1 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent

Depth to carbonates: 25 to 45 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silty clay
Content of rock fragments—none
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to slightly alkaline

2BC horizon:
Hue—10YR, 2.5Y, or 5Y

Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 10 percent, by volume

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture of fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 10 percent, by volume

Taxadjunct Feature

Chenoa silty clay loam, 2 to 5 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soil. The soil is a fine, illitic, mesic Aquollic Hapludalf.

614B—Chenoa silty clay loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines or end moraines
Position on landform: Backslopes

Map Unit Composition

Chenoa and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil
- Soils that have a clayey substratum

Dissimilar soils:
- The moderately well drained Graymont and Varna soils on shoulders and backslopes above the Chenoa soil
- The poorly drained Ashkum and Elpaso soils in swales

Properties and Qualities of the Chenoa Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Chenoa—2e
Prime farmland status: Chenoa—prime farmland in all areas
Hydric soil status: Chenoa—not hydric

614B2—Chenoa silty clay loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Shoulders

Map Unit Composition

Chenoa and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil
- Soils that have a clayey substratum
- Soils that have a surface layer of silt loam

Dissimilar soils:
- The moderately well drained Graymont and Varna soils on shoulders and backslopes above the Chenoa soil
- The poorly drained Ashkum and Elpaso soils in swales

Properties and Qualities of the Chenoa Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow

Depth to restrictive feature (dense material): 45 to 60 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Chenoa—2e
Prime farmland status: Chenoa—prime farmland in all areas
Hydric soil status: Chenoa—not hydric

Clare Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Clare silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 731 feet above mean sea level, in McLean County, Illinois, 1,560 feet north and 2,070 feet west of the southeast corner of sec. 26, T. 25 N., R. 4 E.; USGS Cooksville, Illinois, topographic quadrangle; latitude 40 degrees 35 minutes 34.1 seconds north and longitude 88 degrees 42 minutes 52.1 seconds west; UTM Zone 16T 0354918E 4494749N; NAD 27:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
BA—11 to 16 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure parting to moderate fine granular; friable; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.
Bt1—16 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.
Bt2—24 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; slightly acid; clear smooth boundary.
2Bt3—30 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; common medium prominent masses that have accumulated iron and manganese and are throughout the horizon; 5 percent gravel; neutral; gradual smooth boundary.
2C—44 to 60 inches; light olive brown (2.5Y 5/4) silt loam with strata of loam; massive; friable; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; common medium prominent masses that have accumulated iron and manganese and are throughout the horizon; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 32 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid or neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 to 6

Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to slightly alkaline

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine earth-fraction—silty clay loam, clay loam, loam, or sandy loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—stratified sandy loam, silt loam, loam, gravelly loam, or gravelly sandy loam
Content of rock fragments—0 to 20 percent, by volume
Reaction—slightly acid to moderately alkaline

663A—Clare silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Summits

Map Unit Composition

Clare and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have a seasonal high water table at a depth of more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils in swales
- The somewhat poorly drained Brenton soils on toeslopes below the Clare soil

Properties and Qualities of the Clare Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Clare—1
Prime farmland status: Clare—prime farmland in all areas
Hydric soil status: Clare—not hydric

Dana Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Taxadjunct Feature

The Dana soils in this survey area are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs.

Typical Pedon

Dana silt loam, 2 to 5 percent slopes, eroded, on a 4 percent slope, in a cultivated field, at an elevation of 720 feet above mean sea level, in McLean County, Illinois, 152 feet east and 924 feet south of the northwest corner of sec. 9, T. 21 N., R. 2 E.; USGS Heyworth, Illinois, topographic quadrangle; latitude 40 degrees 17 minutes 40.1 seconds north and longitude 88 degrees 59 minutes 48 seconds west; UTM Zone 16T 0330290E 4462130N; NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam mixed with dark yellowish brown (10YR 4/4) subsoil material; weak medium subangular blocky structure; friable; slightly acid; abrupt smooth boundary.
Bt1—7 to 11 inches; dark yellowish brown (10YR 4/4)

silty clay loam; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—11 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films and brown (10YR 4/3) clay films on faces of peds; few fine prominent iron and manganese concretions and stains throughout; moderately acid; clear smooth boundary.

Bt3—19 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine distinct grayish brown (10YR 5/2) and faint brown (10YR 5/3) iron depletions in the matrix; few fine prominent iron and manganese stains and concretions throughout; slightly acid; abrupt smooth boundary.

2Bt4—34 to 44 inches; light olive brown (2.5Y 5/4) clay loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; few fine brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; 3 percent fine gravel; neutral; clear smooth boundary.

2BC—44 to 53 inches; light olive brown (2.5Y 5/4) clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; friable; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; 3 percent fine gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

2C—53 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; 4 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 40 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam or loam
Content of rock fragments—0 to 7 percent, by volume
Reaction—slightly acid or neutral

2BC and 2C horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

56B2—Dana silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Dana and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that are deeper to loamy material
- Soils that are shallower to loamy material

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Dana Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 60 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Dana—2e
Prime farmland status: Dana—prime farmland in all areas
Hydric soil status: Dana—not hydric

56C2—Dana silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Dana and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that are deeper to loamy material
- Soils that are shallower to loamy material

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Dana Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 60 inches
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Dana—3e
Prime farmland status: Dana—not prime farmland
Hydric soil status: Dana—not hydric

Drummer Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 715 feet above mean sea level, in Champaign County, Illinois, on the University of Illinois South Farm, 1 mile south of Urbana, 1,600 feet east and 300 feet north of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana, Illinois, topographic quadrangle; latitude 40 degrees 05 minutes 04 seconds north and longitude 88 degrees 13 minutes 58 seconds west; UTM Zone 16T 0394896E 4437648N; NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; firm; many fine roots; moderately acid; clear smooth boundary.
A—7 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine

granular; firm; many fine and medium roots; slightly acid; clear smooth boundary.

BA—14 to 19 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses that have accumulated iron and manganese and are in the matrix; slightly acid; gradual smooth boundary.

Bg—19 to 25 inches; dark gray (10YR 4/1) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common fine distinct and prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; many wormholes; neutral; gradual smooth boundary.

Btg1—25 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common distinct dark gray (N 4/) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; neutral; gradual wavy boundary.

Btg2—32 to 41 inches; gray (N 5/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; neutral; clear wavy boundary.

2Btg3—41 to 47 inches; gray (N 5/) loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; abrupt wavy boundary.

2Cg—47 to 60 inches; dark gray (10YR 4/1), stratified loam and sandy loam; massive; friable; many medium prominent olive brown (2.5Y 4/4) masses that have accumulated iron and manganese and are in the matrix; many medium distinct gray (N 5/) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 20 to 35 percent
Depth to carbonates: 40 to 65 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to slightly alkaline

2B and 2BC horizons:
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—loam, silt loam, or silty clay loam
Content of rock fragments—0 to 7 percent, by volume
Reaction—slightly acid to moderately alkaline

2C horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture of the fine-earth fraction—stratified loam, sandy loam, sandy clay loam, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

152A—Drummer silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils with excess lime at or near the surface
- Soils that are subject to flooding

Dissimilar soils:
- The moderately well drained Clare soils on rises above the Drummer soil

- The somewhat poorly drained Brenton and Elburn soils on slight rises above the Drummer soil

Properties and Qualities of the Drummer Soil

Parent material: Silty loess over loamy outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Drummer—2w
Prime farmland status: Drummer—prime farmland where drained
Hydric soil status: Drummer—hydric

721A—Drummer and Elpaso silty clay loams, 0 to 2 percent slopes

Setting

Landform: Outwash plains or ground moraines
Position on landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 45 percent
Elpaso and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils with excess lime at or near the surface
- Soils that are subject to flooding

Dissimilar soils:
- The moderately well drained Catlin soils on rises above the Drummer and Elpaso soils
- The somewhat poorly drained Flanagan and Elburn soils on slight rises above the Drummer and Elpaso soils

Properties and Qualities of the Drummer Soil

Parent material: Silty loess over loamy outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Properties and Qualities of the Elpaso Soil

Parent material: Silty loess over silty till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Drummer and Elpaso—2w

Prime farmland status: Drummer and Elpaso—prime farmland where drained
Hydric soil status: Drummer and Elpaso—hydric

Edgington Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Edgington silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 898 feet above mean sea level, in Carroll County, Illinois, 222 feet west and 45 feet north of the southeast corner of the northeast quarter of sec. 5, T. 25 N., R. 7 E.; USGS Shannon, Illinois, topographic quadrangle; latitude 42 degrees 11 minutes 30.1 seconds north and longitude 89 degrees 42 minutes 31 seconds west; UTM Zone 16T 0276339E 4674398N; NAD 27:

Ap—0 to 16 inches; black (10YR 2/1) silt loam; moderate medium granular structure; friable; many roots; slightly acid; gradual smooth boundary.

A—16 to 20 inches; very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many roots; strongly acid; clear smooth boundary.

E—20 to 31 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam; weak medium platy structure parting to weak fine granular; friable; common roots; few fine distinct dark yellowish brown (10YR 4/4) masses that have accumulated iron and manganese and are in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; strongly acid; clear smooth boundary.

Btg1—31 to 35 inches; dark gray (5Y 4/1) silty clay loam; moderate fine subangular blocky structure; friable; few roots; few dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; strongly acid; gradual smooth boundary.

Btg2—35 to 41 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; in the matrix, few fine distinct dark yellowish brown (10YR 4/4) masses that have accumulated iron and manganese and few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; moderately acid; gradual smooth boundary.

Btg3—41 to 49 inches; gray (10YR 5/1) silty clay loam; weak medium and coarse prismatic structure parting to strong medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organo-clay films on faces of peds; in the matrix, common fine prominent brown (7.5YR 4/4) masses that have accumulated iron and manganese and yellowish brown (10YR 5/6) masses that have accumulated iron; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; moderately acid; clear smooth boundary.

Btg4—49 to 55 inches; gray (10YR 5/1) and light brownish gray (10YR 6/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; in the matrix, many fine prominent brown (7.5YR 4/4) masses that have accumulated iron and manganese and strong brown (7.5YR 5/6) masses that have accumulated iron; common fine prominent black (10YR 2/1) manganese nodules and concretions throughout; a very dark gray (10YR 3/1) krotovina crossing the horizon; moderately acid; gradual smooth boundary.

Cg—55 to 60 inches; gray (10YR 5/1), yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2) silt loam; massive; friable; few fine prominent dark brown (7.5YR 3/2) masses that have accumulated iron and manganese and are in the matrix; slightly acid.

Range in Characteristics

Content of clay in the control section: 27 to 34 inches
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

E horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid or moderately acid

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

272A—Edgington silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Toeslopes

Map Unit Composition

Edgington and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum
- Soils that do not have a silty subsurface layer

Dissimilar soils:
- The somewhat poorly drained Normal soils on slight rises

Properties and Qualities of the Edgington Soil

Parent material: Silty loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Edgington—2w
Prime farmland status: Edgington—prime farmland where drained
Hydric soil status: Edgington—hydric

Elburn Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 617 feet above mean sea level, in Christian County, Illinois, 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; USGS Assumption, Illinois, topographic quadrangle; latitude 39 degrees 37 minutes 4.7 seconds north and longitude 89 degrees 01 minute 45.8 seconds west; UTM Zone 16T 0325797E 4387107N; NAD 27:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; many very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.
A—6 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; many very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; in the matrix, few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and few fine faint brown (10YR 5/3) masses that have accumulated iron and manganese; few fine prominent iron and manganese concretions throughout; slightly acid; clear smooth boundary.
Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure;

firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese concretions throughout; neutral; clear smooth boundary.

Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese concretions throughout; neutral; clear smooth boundary.

Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

Btg1—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Btg2—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films lining pores; common medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few very fine iron and manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses that have accumulated iron and are in the matrix; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to slightly alkaline

2B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—stratified silt loam, sandy loam, loam, or clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—stratified sandy loam, loamy sand, clay loam, or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

198A—Elburn silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Footslopes or summits

Map Unit Composition

Elburn and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have more than 10 percent gravel in the substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales
- The well drained Plano soils on summits above the Elburn soil

Properties and Qualities of the Elburn Soil

Parent material: Loess over outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elburn—1
Prime farmland status: Elburn—prime farmland in all areas
Hydric soil status: Elburn—not hydric

Elkhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct Features

Elkhart silt loam, 0 to 2 percent slopes, and Elkhart silt loam, 2 to 5 percent slopes, are taxadjuncts because they are slightly wetter than is defined for the series and because they have a calcic horizon. In addition, Elkhart silt loam, 2 to 5 percent slopes, eroded, has a thinner surface layer. These differences, however, do not significantly affect the use, management, or interpretations of the soils. Elkhart silt loam, 0 to 2 percent slopes, and Elkhart silt loam, 2 to 5 percent slopes, are fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls. Elkhart silt loam, 2 to 5 percent slopes, eroded, is a fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf.

Typical Pedon

Elkhart silt loam, 0 to 2 percent slopes, on a 2 percent slope, in a cultivated field, at an elevation of 804 feet above mean sea level, in McLean County, Illinois, 528 feet west and 726 feet north of the southeast corner of sec. 20, T. 22 N., R. 3 E.; USGS Heyworth, Illinois, topographic quadrangle; latitude 40 degrees 20 minutes 36.1 seconds north and longitude 88 degrees 52 minutes 58.8 seconds west; UTM Zone 16T 0340068E 4467357N; NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; friable; moderately acid; abrupt smooth boundary.

A—8 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium angular blocky structure; friable; moderately acid; abrupt smooth boundary.

BA—14 to 18 inches; brown (10YR 4/3) silty clay loam; moderate medium angular blocky structure; friable; moderately acid; clear smooth boundary.

Bt1—18 to 25 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; slightly acid; clear smooth boundary.

Bt2—25 to 30 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; in the matrix, few fine faint grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses that have accumulated iron; few fine prominent iron and manganese concretions and stains throughout; slightly acid; clear smooth boundary.

Btk—30 to 35 inches; brown (10YR 5/3) silt loam; weak fine and medium prismatic structure; friable; few faint dark grayish brown (10YR 3/2) organo-

clay films occurring as linings in root channels; in the matrix, common fine and medium faint grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses that have accumulated iron; few fine prominent iron and manganese concretions and stains throughout; few fine prominent masses of carbonate accumulation throughout; slightly effervescent; 1 percent calcium carbonate equivalent; slightly alkaline; clear smooth boundary.

Ck—35 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; in the matrix, common fine and medium distinct grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses that have accumulated iron; few fine prominent iron and manganese concretions and stains throughout; common fine prominent masses of carbonate accumulation throughout; violently effervescent; 23 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 20 to 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BA and B horizons:
Hue—10YR
Value—3 to 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to moderately alkaline

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silt loam or silt
Content of rock fragments—none
Reaction—slightly alkaline or moderately alkaline
Calcium carbonate equivalent—15 to 40 percent

567A—Elkhart silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Elkhart and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that do not have excess lime within a depth of 40 inches
- Soils that have a loamy substratum

Dissimilar soils:
- The poorly drained Hartsburg soils in swales
- The somewhat poorly drained Arrowsmith soils on toeslopes below the Elkhart soil

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elkhart—1
Prime farmland status: Elkhart—prime farmland in all areas
Hydric soil status: Elkhart—not hydric

567B—Elkhart silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Elkhart and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that do not have excess lime within a depth of 40 inches
- Soils that have a loamy substratum

Dissimilar soils:
- The poorly drained Hartsburg soils in swales
- The somewhat poorly drained Arrowsmith soils on toeslopes below the Elkhart soil

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elkhart—2e
Prime farmland status: Elkhart—prime farmland in all areas
Hydric soil status: Elkhart—not hydric

567B2—Elkhart silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Elkhart and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that do not have excess lime within a depth of 40 inches
- Soils that have a loamy substratum

Dissimilar soils:
- The poorly drained Hartsburg soils in swales
- The somewhat poorly drained Arrowsmith soils on toeslopes below the Elkhart soil

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elkhart—2e
Prime farmland status: Elkhart—prime farmland in all areas

Hydric soil status: Elkhart—not hydric

Elliot Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Elliot silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 704 feet above mean sea level, in Livingston County, Illinois, about 2 miles east of Emmington, 690 feet south and 2,436 feet west of the center of sec. 21, T. 29 N., R. 8 E.; USGS Cullom, Illinois, topographic quadrangle; latitude 40 degrees 58 minutes 11 seconds north and longitude 88 degrees 19 minutes 58 seconds west; UTM Zone 16T 0387856E 4536039N; NAD 27:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—6 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay; moderate fine subangular blocky structure; friable; common fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—16 to 23 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—23 to 28 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt4—28 to 35 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few medium prominent white (10YR 8/1) moderately cemented calcium carbonate concretions throughout; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt5—35 to 41 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct gray (5Y 6/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2Cd—41 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; very firm; common fine prominent gray (5Y 5/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 45 percent
Depth to carbonates: 17 to 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silty clay, silty clay loam, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR or 2.5Y
Value—4 to 6

Chroma—2 to 6
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to slightly alkaline

2BC and 2Cd horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silty clay loam or clay loam
Content of rock fragments—1 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

146A—Elliott silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Footslopes or summits

Map Unit Composition

Elliott and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum

Dissimilar soils:
- The poorly drained Ashkum soils in swales

Properties and Qualities of the Elliott Soil

Parent material: Thin mantle of loess or other silty material over clayey till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature (dense material): 20 to 45 inches
Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Elliott—2w
Prime farmland status: Elliott—prime farmland in all areas
Hydric soil status: Elliott—not hydric

Elpaso Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Elpaso silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 715 feet above mean sea level, in Woodford County, Illinois, about 2 miles north of El Paso, 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; USGS Benson, Illinois, topographic quadrangle; latitude 40 degrees 46 minutes 03 seconds north and longitude 89 degrees 01 minute 34 seconds west; UTM Zone 16T 0328989E 4514611N; NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine distinct light olive brown (2.5Y 5/4) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark

gray (10YR 4/1) clay films on faces of peds; in the matrix, common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and few fine distinct light olive brown (2.5Y 5/4) masses that have accumulated iron and manganese; common fine prominent iron and manganese accumulations throughout; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; in the matrix, common medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and common fine distinct light olive brown (2.5Y 5/4) masses that have accumulated iron; common fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 5 percent gravel; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 4 percent gravel; slight effervescence, starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent olive gray (5Y 5/2) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 4 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 35 to 65 inches

Ap and A horizons:
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam, silt loam, or silty clay
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

2B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture of the fine-earth fraction—silty clay loam, silt loam, loam, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral or slightly alkaline

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silty clay loam, silt loam, loam, or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

721A—Drummer and Elpaso silty clay loams, 0 to 2 percent slopes

Setting

Landform: Outwash plains or ground moraines
Position on landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 45 percent
Elpaso and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils with excess lime at or near the surface
- Soils that are subject to flooding

Dissimilar soils:
- The moderately well drained Catlin soils on rises above the Drummer and Elpaso soils
- The somewhat poorly drained Flanagan and Elburn soils on slight rises above the Drummer and Elpaso soils

Properties and Qualities of the Drummer Soil

Parent material: Silty loess over loamy outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Properties and Qualities of the Elpaso Soil

Parent material: Silty loess over silty till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Drummer and Elpaso—2w
Prime farmland status: Drummer and Elpaso—prime farmland where drained
Hydric soil status: Drummer and Elpaso—hydric

Fincastle Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs

Typical Pedon

Fincastle silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 673 feet above mean sea level, in Vermilion County, Illinois, 2,460 feet north and 1,200 feet west of the southeast corner of sec. 4, T. 18 N., R. 11 W.; USGS Danville Southeast, Illinois, topographic quadrangle; latitude 40 degrees 02 minutes 58.6 seconds north and longitude 87 degrees 36 minutes 17.6 seconds west; UTM Zone 16T 0448404E 4433225N; NAD 27:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; moderately acid; abrupt smooth boundary.

BE—10 to 14 inches; brown (10YR 4/3) silt loam; moderate very fine subangular blocky structure; friable; few faint grayish brown (10YR 5/2) silt coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

Bt1—14 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; gradual smooth boundary.

Bt2—24 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; many fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent

masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

2Bt3—35 to 43 inches; olive brown (2.5Y 4/4) clay loam; moderate medium subangular blocky structure; friable; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; 5 percent fine and medium gravel; moderately acid; gradual smooth boundary.

2BC—43 to 49 inches; olive brown (2.5Y 4/4) clay loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coatings lining pores; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; 5 percent fine and medium gravel; very slightly effervescent; moderately alkaline; gradual smooth boundary.

2Cd—49 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; 5 percent fine and medium gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 33 percent
Depth to carbonates: 35 to 60 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—strongly acid to neutral

BE horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—strongly acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—strongly acid to slightly acid

2B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—clay loam, loam, or silty clay loam
Content of rock fragments—0 to 7 percent, by volume
Reaction—moderately acid to slightly alkaline

2BC horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—clay loam or loam
Content of rock fragments—0 to 8 percent, by volume
Reaction—neutral to moderately alkaline

2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—loam or silt loam
Content of rock fragments—2 to 14 percent, by volume
Reaction—slightly alkaline or moderately alkaline
Bulk density—1.65 to 1.80 grams/cc

496A—Fincastle silt loam, 0 to 2 percent slopes

Setting

Landform: End moraines or ground moraines
Position on landform: Summits

Map Unit Composition

Fincastle and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have a clayey subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Fincastle Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 60 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 0.5 foot to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fincastle—2w
Prime farmland status: Fincastle—prime farmland where drained
Hydric soil status: Fincastle—not hydric

Flanagan Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Flanagan silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a grass border of the University of Illinois experimental plots, at an elevation of 730 feet above mean sea level, in Champaign County, Illinois, about 1 mile south of Champaign, on the University of Illinois South Farm, 1,607 feet east and 1,405 feet north of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana, Illinois, topographic quadrangle; latitude 40 degrees 05 minutes 14 seconds north and longitude 88 degrees 13 minutes 57 seconds west; UTM Zone 16T 0394924E 4437956N; NAD 27:

A1—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; slightly acid; gradual smooth boundary.

A2—8 to 15 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

A3—15 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

Bt1—18 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint brown (10YR 4/3) masses that have accumulated iron and manganese and are in the matrix; moderately acid; clear smooth boundary.

Bt2—23 to 32 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint brown (10YR 5/3 and 4/3) masses that have accumulated iron and manganese and are in the matrix; moderately acid; clear smooth boundary.

Bt3—32 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint light yellowish brown (10YR 6/4) and distinct yellowish brown (10YR 5/6) masses that have accumulated iron and manganese and are in the matrix; slightly acid; clear smooth boundary.

Bt4—38 to 45 inches; 40 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), and 30 percent brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; gradual smooth boundary.

2Bt5—45 to 49 inches; 35 percent yellowish brown (10YR 5/4), 35 percent light olive brown (2.5Y 5/4), and 30 percent light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent fine gravel; neutral; abrupt smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common medium prominent white (10YR 8/1) rounded weakly cemented calcium carbonate nodules throughout; 5 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent
Depth to carbonates: 40 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam, silt loam, or silty clay
Content of rock fragments—none
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—clay loam, silt loam, silty clay loam, or loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly acid to slightly alkaline

2BC and 2C horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

154A—Flanagan silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Flanagan and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils with less clay in the subsoil
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Flanagan Soil

Parent material: Loess and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Flanagan—1
Prime farmland status: Flanagan—prime farmland in all areas
Hydric soil status: Flanagan—not hydric

Fox Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silt loam, 5 to 10 percent slopes, eroded, on an 8 percent slope, in a cultivated field, at an elevation of 708 feet above mean sea level, in McLean County, Illinois, 1,760 feet north and 520 feet east of the southwest corner of sec. 21, T. 25 N., R. 4 E.; USGS Merna, Illinois, topographic quadrangle; latitude 40

degrees 36 minutes 29 seconds north and longitude 88 degrees 45 minutes 45 seconds west; UTM Zone 16T 0350888E 4496525N; NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Bt1—8 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; moderately acid; clear smooth boundary.

2Bt2—22 to 28 inches; dark yellowish brown (10YR 4/4) sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 10 percent gravel; moderately acid; clear smooth boundary.

2Bt3—28 to 35 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 15 percent gravel; slightly alkaline; clear smooth boundary.

2C—35 to 60 inches; yellowish brown (10YR 5/4) gravelly coarse sand with strata of loamy sand; single grain; loose; 20 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 18 to 35 percent
Depth to carbonates: 30 to 40 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid or neutral

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam, loam, or sandy loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—loam, clay loam, or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid or moderately acid

2B horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, sandy loam, sandy clay loam, or the gravelly analogs of those textures
Content of rock fragments—0 to 35 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 or 4
Texture—stratified sand, coarse sand, loamy sand, or the gravelly, very gravelly, or extremely gravelly analogs of those textures
Content of rock fragments—0 to 90 percent, by volume
Reaction—slightly alkaline or moderately alkaline

327B2—Fox silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Stream terraces or outwash plains
Position on landform: Shoulders

Map Unit Composition

Fox and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a sandy and gravelly substratum closer to the surface
- Soils that have a slope of less than 2 percent

Dissimilar soils:
- The poorly drained Drummer and Selma soils in swales

Properties and Qualities of the Fox Soil

Parent material: Loess over sand and gravel
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature (strongly contrasting textural stratification): 20 to 40 inches
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fox—2e
Prime farmland status: Fox—prime farmland in all areas
Hydric soil status: Fox—not hydric

327C2—Fox silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains or stream terraces
Position on landform: Backslopes

Map Unit Composition

Fox and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that are deeper to a sandy and gravelly substratum
- Soils that have a thicker and darker surface layer

Dissimilar soils:
- The poorly drained Drummer and Selma soils in swales

Properties and Qualities of the Fox Soil

Parent material: Loess over sand and gravel
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature (strongly contrasting textural stratification): 20 to 40 inches
Available water capacity: About 5.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Fox—3e
Prime farmland status: Fox—not prime farmland
Hydric soil status: Fox—not hydric

Graymont Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Taxadjunct Features

The Graymont soils in this survey area are taxadjuncts because they have a thinner dark surface layer and are slightly wetter than is defined as the range for the series. These differences, however, do not significantly affect the use, management, or interpretations of the soils. The soils are fine-silty, mixed, superactive, mesic Aquollic Hapludalfs.

Typical Pedon

Graymont silt loam, 2 to 5 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 745 feet above mean sea level, in McLean County, Illinois, 83 feet north and 2,611 feet west of the southeast corner of sec. 14, T. 26 N., R. 2 E.; USGS Gridley, Illinois, topographic quadrangle; latitude 40 degrees 42 minutes 33.9 seconds north and longitude 88 degrees 57 minutes 25.5 seconds west; UTM Zone 16T 0334676E 4508126N; NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; friable; neutral; abrupt wavy boundary.

Bt1—8 to 15 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—15 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly acid; clear wavy boundary.

2Bt3—27 to 34 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; firm; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine distinct dark gray (2.5Y 4/1) iron depletions in the matrix; 1 percent gravel; neutral; gradual wavy boundary.

2BC—34 to 39 inches; light olive brown (2.5Y 5/4) silt loam; weak coarse prismatic structure; firm; few faint dark brown (10YR 3/3) organo-clay films on faces of peds and in root channels and pores; few fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine distinct dark gray (2.5Y 4/1) iron depletions in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C—39 to 60 inches; light olive brown (2.5Y 5/4) silt loam; massive; very firm; few fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid or neutral

B horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid or neutral

2B and 2BC horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

541B2—Graymont silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines or end moraines
Position on landform: Backslopes or summits

Map Unit Composition

Graymont and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a clayey subsoil
- Soils that have a thicker subsoil
- Soils that have excess lime within a depth of 20 inches

Dissimilar soils:
- The poorly drained Ashkum soils in swales

Properties and Qualities of the Graymont Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature (dense material): 24 to 45 inches

Available water capacity: About 9.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 1.5 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Graymont—2e
Prime farmland status: Graymont—prime farmland in all areas
Hydric soil status: Graymont—not hydric

Harpster Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 740 feet above mean sea level, in Ford County, Illinois, 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; USGS Gibson City West, Illinois, topographic quadrangle; latitude 40 degrees 26 minutes 24 seconds north and longitude 88 degrees 25 minutes 23 seconds west; UTM Zone 16T 0379306E 4477356N; NAD 27:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate); moderately alkaline; abrupt smooth boundary.

Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine roots; many snail shells; strongly effervescent (18 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine distinct light olive brown (2.5Y 5/4) masses that have accumulated iron and manganese and are in the matrix; few snail shells; slightly effervescent (7 percent calcium carbonate); moderately alkaline; gradual smooth boundary.

Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses that have accumulated iron and manganese and are in the matrix; few snail shells; slightly effervescent (5 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) masses that have accumulated iron and manganese and are in the matrix; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Cg2—56 to 60 inches; gray (10YR 5/1) loam, massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 0 to 8 inches

Ap and A horizons:
Hue—10YR, 2.5Y, or N
Value—2 or 3

Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately alkaline

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately alkaline or slightly alkaline

C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture of the fine-earth fraction—silt loam or loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately alkaline

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains or ground moraines
Position on landform: Toeslopes

Map Unit Composition

Harpster and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have excess lime at a depth of more than 8 inches

Dissimilar soils:
- The moderately well drained Elkhart soils on rises above the Harpster soil

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess or other silty material over drift
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Harpster—2w
Prime farmland status: Harpster—prime farmland where drained
Hydric soil status: Harpster—hydric

Hartsburg Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Hartsburg silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 571 feet above mean sea level, in Logan County, Illinois, about 4 miles southwest of Emden, 660 feet west and 40 feet north of the southeast corner of sec. 23, T. 21 N., R. 4 W.; USGS New Holland, Illinois, topographic quadrangle; latitude 40 degrees 14 minutes 58 seconds north and longitude 89 degrees 31 minutes 28 seconds west; UTM Zone 16T 0285283E 4458291N; NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.

A1—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—12 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; firm; few very fine roots; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries along root channels and pores; few fine distinct dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg—17 to 21 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common very dark gray (10YR 3/1) krotovinas; neutral; clear smooth boundary.

Bkg—21 to 30 inches; gray (5Y 5/1) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) and grayish brown (2.5Y 5/2) pressure faces on peds; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine and medium prominent rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; common very dark gray (10YR 3/1) krotovinas; slightly effervescent; slightly alkaline; abrupt wavy boundary.

BCkg—30 to 34 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse subangular blocky structure; firm; many distinct gray (N 5/) and grayish brown (2.5Y 5/2) linings in pores and root channels; few fine prominent rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining pores; many medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; many medium and coarse prominent rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; common very dark gray (10YR 3/1) krotovinas; violently effervescent among concretions, slightly effervescent in the fine earth; slightly alkaline; clear wavy boundary.

Ckg—34 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent strong brown (7.5YR 5/8) masses that have accumulated iron and diffuse boundaries and are lining pores; few medium prominent rounded white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; common very dark gray 10YR 3/1) krotovinas; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 15 to 35 inches

Ap and A horizons:
Hue—10YR or N
Value—2 or 3
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 5
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—neutral to moderately alkaline

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly alkaline or moderately alkaline

244A—Hartsburg silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains or ground moraines
Position on landform: Toeslopes

Map Unit Composition

Hartsburg and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that do not have excess lime within a depth of 40 inches
- Soils that have excess lime at or near the surface

Dissimilar soils:
- The somewhat poorly drained Arrowsmith soils on slight rises
- The moderately well drained Elkhart soils on backslopes and summits above the Hartsburg soil

Properties and Qualities of the Hartsburg Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Hartsburg—2w
Prime farmland status: Hartsburg—prime farmland where drained
Hydric soil status: Hartsburg—hydric

Hennepin Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Eutrudepts

Typical Pedon

Hennepin loam, in an area of Miami and Hennepin soils, 10 to 18 percent slopes, on a 11 percent slope, in pasture-hayland, at an elevation of 757 feet above mean sea level, in McLean County, Illinois, 2,000 feet west and 125 feet south of the northeast corner of sec. 19, T. 25 N., R. 2 E.; USGS Normal West, Illinois, topographic quadrangle; latitude 40 degrees 37 minutes 12.9 seconds north and longitude 89 degrees 01 minute 48.5 seconds west; UTM Zone 16T 0328280E 4498378N; NAD 27:

Ap—0 to 5 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure parting to weak medium granular; friable; few medium roots; many faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 1 percent gravel; slightly alkaline; abrupt smooth boundary.
Bt1—5 to 9 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; many faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
Bt2—9 to 16 inches; light olive brown (2.5Y 5/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 5 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
C—16 to 60 inches; light yellowish brown (2.5Y 6/4) loam; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 18 to 30 percent
Depth to carbonates: 0 to 15 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—1 to 4
Texture of the fine-earth fraction—silt loam or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to moderately alkaline

B horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam, loam, silt loam, or sandy loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—loam, silt loam, clay loam, or sandy loam
Content of rock fragments—3 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

964D—Miami and Hennepin soils, 10 to 18 percent slopes

Setting

Landform: End moraines

Position on landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 45 percent
Miami and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thin subsoil of clayey material
- Soils that have a sandy and/or gravelly substratum
- Soils that are moderately eroded

Dissimilar soils:
- Soils that are severely eroded
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight in forested areas
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Properties and Qualities of the Hennepin Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 20 inches
Available water capacity: About 6.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Accelerated erosion: None or slight in forested areas; moderate or severe in areas of cropland
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami and Hennepin—4e
Prime farmland status: Miami and Hennepin—not prime farmland
Hydric soil status: Miami and Hennepin—not hydric

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 45 percent
Miami and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have a thin subsoil of clayey material
- Soils that have a sandy and/or gravelly substratum

Dissimilar soils:
- Soils that are severely eroded
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight in forested areas; moderate or severe in areas of cropland
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Properties and Qualities of the Hennepin Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 20 inches
Available water capacity: About 6.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Accelerated erosion: None or slight in forested areas
Potential for frost action: Moderate
Risk of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami and Hennepin—6e
Prime farmland status: Miami and Hennepin—not prime farmland
Hydric soil status: Miami and Hennepin—not hydric

Huntsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded, on a 2 percent slope, in a cultivated field, at an elevation of 667 feet above mean sea level, in Knox County, Illinois, about 5 miles east and 2 miles north of Victoria, 2,475 feet east and 495 feet south of the northwest corner of sec. 1, T. 12 N., R. 4 E.; USGS Lafayette, Illinois, topographic quadrangle; latitude 41 degrees 03 minutes 37.8 seconds north and longitude 89 degrees 59 minutes 42.1 seconds west; UTM Zone 16T 0248323E 4549585N; NAD 27:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; slightly acid; clear smooth boundary.
A1—10 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
A2—16 to 27 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
AC—27 to 52 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure; friable; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.
C1—52 to 65 inches; dark brown (10YR 3/3) silt loam; massive; friable; slightly acid; clear smooth boundary.
C2—65 to 80 inches; grayish brown (10YR 5/2) silt loam; massive; friable; few fine distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; few fine prominent yellowish brown (10YR 5/6) and few coarse prominent yellowish red (5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (N2/) masses that have accumulated iron and manganese and are throughout the horizon; neutral.

Range in Characteristics

Content of clay in the control section: 18 to 27 percent
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid or neutral

AC horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume

Reaction—neutral

C horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam or stratified loam, sandy loam, and silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid or neutral

8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Huntsville and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil and substratum
- Soils that have a sandy substratum

Dissimilar soils:
- Soils that are not subject to flooding
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Huntsville Soil

Parent material: Alluvium
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Low
Depth to an apparent seasonal high water table: 3.5 to 6.0 feet, Feb.–April
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Huntsville—2w
Prime farmland status: Huntsville—prime farmland in all areas
Hydric soil status: Huntsville—not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 804 feet above mean sea level, in Knox County, Illinois, about 0.25 mile northeast of Oneida, 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; USGS Oneida, Illinois, topographic quadrangle; latitude 41 degrees 04 minutes 40 seconds north and longitude 90 degrees 13 minutes 03 seconds west; UTM Zone 15T 0733756E 4550910N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.
A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; common distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.
BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; moderately acid; clear smooth boundary.
Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; slightly acid; clear smooth boundary.
Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure

parting to moderate medium angular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; slightly alkaline; gradual smooth boundary.

BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining pores and on a few vertical faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; common fine black (7.5YR 2.5/1) iron and manganese oxide stains on faces of peds; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films lining pores; common fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of vertical cracks; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BA, B, and BC horizons:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam, silt loam, or silty clay
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid to moderately alkaline

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or footslopes

Map Unit Composition

Ipava and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils with less clay in the subsoil
- Soils with loamy outwash or till in the substratum

Dissimilar soils:
- The poorly drained Sable soils in swales
- The well drained Osco soils on rises above the Ipava soil

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium

Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ipava—1
Prime farmland status: Ipava—prime farmland in all areas
Hydric soil status: Ipava—not hydric

902A—Ipava-Sable complex, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Ipava and similar soils: 60 percent
Sable and similar soils: 20 percent
Dissimilar soils and miscellaneous areas: 20 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil
- Soils that have a slope of 3 to 5 percent

Dissimilar components:
- Orthents, loamy, and Urban land in areas where development is intensive
- The very poorly drained Peotone soils in closed depressions
- The moderately well drained Catlin soils on rises above the Ipava soil

Properties and Qualities of the Ipava Soil

Parent material: Silty loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Ipava—1; Sable—2w
Prime farmland status: Ipava and Sable—prime farmland where drained
Hydric soil status: Ipava—not hydric; Sable—hydric

Kane Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Kane silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 860 feet above mean sea level, in McLean County, Illinois, 335 feet north and 1,790 feet east of the southwest corner of sec. 17, T. 23 N., R. 5 E.; USGS Arrowsmith, Illinois, topographic quadrangle; latitude 40 degrees 16 minutes 39.1 seconds north and longitude 88 degrees 33 minutes 16.9 seconds west; UTM Zone 16T 0358997E 4478067N; NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate very fine and

fine granular structure; friable; common very fine and fine roots; moderately acid; abrupt smooth boundary.

A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—14 to 17 inches; brown (10YR 4/3) loam; moderate fine and very fine subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; 1 percent gravel; moderately acid; clear smooth boundary.

Bt2—17 to 24 inches; light olive brown (2.5Y 5/4) clay loam; moderate fine and very fine subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 2 percent gravel; moderately acid; clear smooth boundary.

Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) sandy clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 5 percent gravel; moderately acid; clear smooth boundary.

Btg—30 to 35 inches; grayish brown (2.5Y 5/2) sandy clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6 and 5/8) masses that have accumulated iron and are in the matrix; few fine distinct light olive brown (2.5Y 5/4) masses that have accumulated iron and manganese and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 14 percent gravel; slightly acid; clear smooth boundary.

2Cg1—35 to 68 inches; grayish brown (2.5Y 5/2) gravelly loamy sand; single grain; loose; few very fine roots; common medium prominent yellowish brown (10YR 5/6 and 5/8) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 27 percent gravel; slightly effervescent; neutral; abrupt smooth boundary.

2Cg2—68 to 80 inches; gray (2.5Y 6/1) loamy sand; single grain; loose; common medium prominent yellowish brown (10YR 5/6 and 5/8) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 10 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 25 to 34 percent in the fine-loamy upper part of the profile and 0 to 10 percent in the sandy lower part
Depth to carbonates: 20 to 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to neutral

B or 2B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam, clay loam, silty clay loam, sandy clay loam, or sandy loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—moderately acid to neutral

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture of the fine-earth fraction—loamy sand, coarse sand, or sand

Content of rock fragments—average of 15 to 75 percent, by volume
Reaction—neutral to moderately alkaline

343A—Kane silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains or outwash terraces
Position on landform: Toeslopes

Map Unit Composition

Kane and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum

Dissimilar soils:
- The poorly drained Selma and Drummer soils in swales

Properties and Qualities of the Kane Soil

Parent material: Loess and/or outwash over sand and gravel
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature (strongly contrasting textural stratification): 20 to 40 inches
Available water capacity: About 6.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Kane—1
Prime farmland status: Kane—prime farmland in all areas
Hydric soil status: Kane—not hydric

Kaneville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Kaneville silt loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 721 feet above mean sea level, in McLean County, Illinois, 3,100 feet north and 2,850 feet east of the southwest corner of sec. 4, T. 25 N., R. 3 E.; USGS Lexington, Illinois, topographic quadrangle; latitude 40 degrees 39 minutes 25.9 seconds north and longitude 88 degrees 52 minutes 28.3 seconds west; UTM Zone 16T 0341530E 4502170N; NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; slightly acid; abrupt smooth boundary.
E—7 to 11 inches; brown (10YR 4/3) silt loam; weak thin platy structure; friable; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
Bt1—11 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—23 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; moderately acid; clear smooth boundary.
Bt3—31 to 46 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium prismatic structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent dark gray (10YR 4/1) iron depletions in the matrix; few fine faint yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; moderately acid; clear smooth boundary.
2Bt4—46 to 50 inches; dark yellowish brown (10YR 4/6) loam; weak medium prismatic structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent dark gray (10YR 4/1) iron depletions; few fine faint yellowish brown

(10YR 5/6) masses that have accumulated iron and are in the matrix; slightly acid; clear smooth boundary.

2C—50 to 60 inches; dark yellowish brown (10YR 4/6) sandy loam; massive; friable; neutral.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—loam, sandy loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to neutral

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—sandy loam, loam, or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to moderately alkaline

667A—Kaneville silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces or outwash plains
Position on landform: Summits

Map Unit Composition

Kaneville and similar soils: 87 percent
Dissimilar soils: 13 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have a thinner and lighter colored surface layer
- Soils that have a loamy substratum closer to the surface

Dissimilar soils:
- The poorly drained Edgington and Drummer soils in swales

Properties and Qualities of the Kaneville Soil

Parent material: Silty loess over loamy outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Kaneville—1
Prime farmland status: Kaneville—prime farmland in all areas
Hydric soil status: Kaneville—not hydric

667B—Kaneville silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on landform: Summits

Map Unit Composition

Kaneville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a silty substratum
- Soils that have a thinner and lighter colored surface layer
- Soils that have a loamy substratum closer to the surface

Dissimilar soils:
- The poorly drained Edgington and Drummer soils in swales

Properties and Qualities of the Kaneville Soil

Parent material: Silty loess over loamy outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Kaneville—2e
Prime farmland status: Kaneville—prime farmland in all areas
Hydric soil status: Kaneville—not hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 655 feet above mean sea level, in Adams County, Illinois, 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; latitude 40 degrees 11 minutes 23.3 seconds north and longitude 91 degrees 12 minutes 13.2 seconds west; UTM Zone 15T 0652918E 4450162N; NAD 27:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few prominent brown (7.5YR 4/4) masses that have accumulated iron and manganese and are along pores; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common fine roots; few faint dark grayish brown (10YR 4/2) organic coatings on faces of peds and in pores; few faint light gray (10YR 7/2 dry) silt coatings throughout; common fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; few fine faint grayish

brown (10YR 5/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds and few faint pressure faces; many fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions throughout; many fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; common fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; moderately acid; clear smooth boundary.

Bt4—44 to 51 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium and coarse prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; moderately acid; clear smooth boundary.

BC1—51 to 63 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.

BC2—63 to 76 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; common prominent very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many medium and coarse strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; few medium distinct strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent black (2.5Y 2.5/1) masses that have accumulated iron and manganese and are throughout the horizon; slightly acid.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly acid

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silty clay
Content of rock fragments—none
Reaction—strongly acid or moderately acid

BC and C horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—slightly acid to moderately alkaline

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Keomah and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils with a thicker and darker surface layer
- Soils with less clay in the subsoil

Dissimilar soils:
- The well drained Rozetta soils on rises above the Keomah soil
- The poorly drained Edgington soils in swales

Properties and Qualities of the Keomah Soil

Parent material: Loess or other silty material
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 0.5 foot to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Keomah—2w
Prime farmland status: Keomah—prime farmland where drained
Hydric soil status: Keomah—not hydric

La Rose Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls

Typical Pedon

La Rose silt loam, 5 to 10 percent slopes, eroded, on an 8 percent slope, in a cultivated field, at an elevation of 870 feet above mean sea level, in Lee County, Illinois, about 4 miles northeast of Compton, 2,342 feet north and 114 feet east of the southwest corner of sec. 33, T. 38 N., R. 2 E.; USGS Compton, Illinois, topographic quadrangle; latitude 41 degrees 43 minutes 22.6 seconds north and longitude 89 degrees 01 minute 07 seconds west; UTM Zone 16T 0332091E 4620773N; NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few fine roots; few brown (7.5YR 4/4) peds of Bt material mixed throughout; 1 percent gravel; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few fine roots; common thin dark brown (10YR 3/3) organo-clay films on faces of peds; common faint very dark grayish brown (10YR 3/2) organic coatings lining root channels; 1 percent gravel; neutral; clear smooth boundary.

Bt2—14 to 19 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings lining root channels; 1 percent gravel; neutral; clear smooth boundary.

C1—19 to 42 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; 1 percent gravel; strongly effervescent; slightly alkaline; gradual smooth boundary.

C2—42 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; 1 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 10 to 24 inches

Ap or A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 3 percent, by volume

Reaction—neutral or slightly alkaline

B horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam, silty clay loam, or loam
Content of rock fragments—1 to 7 percent, by volume
Reaction—slightly acid to slightly alkaline

BC or C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam or silt loam
Content of rock fragments—1 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

60B2—La Rose silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are silty to a depth of 24 or more inches

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the La Rose Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 24 inches
Available water capacity: About 6.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: La Rose—2e
Prime farmland status: La Rose—prime farmland in all areas
Hydric soil status: La Rose—not hydric

60C2—La Rose silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are silty to a depth of 24 or more inches
- Soils that are severely eroded

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the La Rose Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 24 inches
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: La Rose—3e
Prime farmland status: La Rose—not prime farmland
Hydric soil status: La Rose—not hydric

60D2—La Rose silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are silty to a depth of 24 or more inches

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains

Properties and Qualities of the La Rose Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 24 inches
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: La Rose—4e
Prime farmland status: La Rose—not prime farmland
Hydric soil status: La Rose—not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, occasionally flooded, on a nearly level slope, in a cultivated field, at an elevation of 699 feet above mean sea level, in Bureau County, Illinois, 1,040 feet east and 318 feet south of the northwest corner of sec. 17, T. 17 N., R. 9 E.; USGS Princeton North, Illinois, topographic quadrangle; latitude 41 degrees 27 minutes 53.9 seconds north and longitude 89 degrees 29 minutes 13.3 seconds west; UTM Zone 16T 0292303E 4593160N; NAD 27:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; few medium roots; neutral; clear smooth boundary.
A1—11 to 19 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few medium roots; neutral; gradual smooth boundary.
A2—19 to 28 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few medium roots; neutral; gradual smooth boundary.
Bg1—28 to 50 inches; dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; in the matrix, few fine faint brown (10YR 4/3) masses that have accumulated iron and manganese and common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron; common very dark grayish brown (10YR 3/2) krotovinas; neutral; gradual smooth boundary.
Bg2—50 to 60 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few medium roots; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; common very dark grayish brown (10YR 3/2) krotovinas; neutral.

Range in Characteristics

Content of clay in the control section: 18 to 28 percent
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

C horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture of the fine-earth fraction—dominantly silt loam or silty clay loam; loam or sandy loam below a depth of 40 inches in some pedons
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a clayey substratum

Dissimilar soils:
- Soils that are not subject to flooding
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Lawson Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Low
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lawson—2w
Prime farmland status: Lawson—prime farmland in all areas
Hydric soil status: Lawson—not hydric

Lisbon Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Lisbon silt loam, 0 to 2 percent slopes, on a 1 percent slope, in a cultivated field, at an elevation of 794 feet above mean sea level, in McLean County, Illinois, 1,557 feet north and 550 feet west of the southeast corner of sec. 19, T. 24 N., R. 6 E.; USGS Colfax, Illinois, topographic quadrangle; latitude 40 degrees 31 minutes 7.8 seconds north and longitude 88 degrees 33 minutes 23.4 seconds west; UTM Zone 16T 0368141E 4486304N; NAD 27:

Ap—0 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; many fine roots; slightly acid; clear smooth boundary.
AB—11 to 14 inches; 60 percent very dark grayish brown (10YR 3/2) and 40 percent brown (10YR 4/3) silty clay loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organo-clay films on faces of peds; neutral; clear smooth boundary.
Bt1—14 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure parting to moderate fine subangular blocky; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions

in the matrix; few fine distinct iron stains on faces of peds; neutral; abrupt smooth boundary.

Bt2—22 to 25 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and few fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; common fine distinct iron stains on faces of peds; few fine prominent iron and manganese concretions throughout; neutral; clear smooth boundary.

2Bt3—25 to 32 inches; light olive brown (2.5Y 5/4) clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent iron stains on faces of peds; few fine prominent iron and manganese concretions throughout; 1 percent gravel; slightly alkaline; abrupt smooth boundary.

2C—32 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; common medium prominent gray (N 6/) iron depletions in the matrix; common medium faint light yellowish brown (2.5Y 6/4) masses that have accumulated iron and manganese and are in the matrix; few medium distinct iron stains on faces of rock structure peds; 1 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 25 to 34 percent
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—slightly acid to slightly alkaline

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—clay loam or loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid to moderately alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—loam or sandy loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

59A—Lisbon silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Lisbon and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have loamy material closer to the surface

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Lisbon Soil

Parent material: Silty loess over loamy till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 42 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High

Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lisbon—1
Prime farmland status: Lisbon—prime farmland in all areas
Hydric soil status: Lisbon—not hydric

Lorenzo Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls

Taxadjunct Feature

The Lorenzo soils in this survey area are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs.

Typical Pedon

Lorenzo silt loam, 2 to 5 percent slopes, eroded, on a 4 percent slope, in a cultivated field, at an elevation of 646 feet above mean sea level, in McLean County, Illinois, 1,056 feet north and 495 feet west of the southeast corner of sec. 23, T. 22 N., R. 1 W.; USGS McLean, Illinois, topographic quadrangle; latitude 40 degrees 20 minutes 37 seconds north and longitude 89 degrees 10 minutes 15.1 seconds west; UTM Zone 16T 0315617E 4467943N; NAD 27:

Ap—0 to 7 inches; mixed dark brown (10YR 3/3) and strong brown (7.5YR 4/6) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to weak fine granular; friable; slightly acid; abrupt smooth boundary.

Bt1—7 to 14 inches; strong brown (7.5YR 4/6) clay loam; weak medium subangular blocky structure; friable; common distinct dark brown (7.5YR 3/4) clay films on faces of peds; few fine iron and manganese concretions and stains throughout; 10 percent fine gravel; moderately acid; clear smooth boundary.

Bt2—14 to 22 inches; brown (7.5YR 4/4) sandy clay loam; weak medium and coarse subangular blocky structure; friable; few distinct dark brown (7.5YR 3/4) clay films on faces of peds; common fine iron and manganese concretions and stains throughout; 14 percent fine and medium gravel; slightly acid; clear smooth boundary.

2C—22 to 60 inches; brown (10YR 5/3) and yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 20 to 35 percent
Depth to carbonates: 12 to 24 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 to 6
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, sandy clay loam, loam, or the gravelly analogs of those textures
Content of rock fragments—2 to 35 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of rock fragments—20 to 90 percent, by volume
Reaction—neutral to moderately alkaline

318B2—Lorenzo silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash terraces
Position on landform: Shoulders or summits

Map Unit Composition

Lorenzo and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker subsoil
- Soils with a slope of less than 2 percent

- Soils that have a thicker and darker surface layer

Dissimilar soils:
- The poorly drained Selma soils in swales
- The somewhat poorly drained Kane soils on toeslopes below the Lorenzo soil

Properties and Qualities of the Lorenzo Soil

Parent material: Loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature (strongly contrasting textural stratification): 12 to 24 inches
Available water capacity: About 4.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Lorenzo—3s
Prime farmland status: Lorenzo—not prime farmland
Hydric soil status: Lorenzo—not hydric

Martinsville Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Martinsville silt loam, 10 to 18 percent slopes, eroded, on a 15 percent slope, in a pasture, at an elevation of 765 feet above mean sea level, in McLean County, Illinois, 1,860 feet north and 1,360 feet east of the southwest corner of sec. 5, T. 22 N., R. 3 E.; USGS Bloomington East, Illinois, topographic quadrangle; latitude 40 degrees 23 minutes 25 seconds north and longitude 88 degrees 53 minutes 46 seconds west; UTM Zone 16T 0339062E 4472599N; NAD 27:

Ap—0 to 6 inches; 75 percent dark grayish brown (10YR 4/2) and 25 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common very fine and fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.

BE—6 to 10 inches; brown (10YR 4/3) silt loam; weak medium platy structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—10 to 18 inches; dark yellowish brown (10YR 4/4) loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—18 to 28 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) and brown (10YR 4/3) clay films on faces of peds; few fine faint dark yellowish brown (10YR 4/6) masses that have accumulated iron and manganese and are in the matrix; moderately acid; clear smooth boundary.

Bt3—28 to 41 inches; dark yellowish brown (10YR 4/6) clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine faint yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; moderately acid; clear smooth boundary.

Bt4—41 to 60 inches; dark yellowish brown (10YR 4/4) sandy clay loam; weak medium prismatic structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; slightly acid.

Range in Characteristics

Content of clay in the control section: 22 to 33 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 6
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—strongly acid to neutral

BE horizon:
Hue—10YR

Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—loam or silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid or slightly acid

B horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam, clay loam, fine sandy loam, sandy loam, or silt loam
Content of rock fragments—none
Reaction—strongly acid to slightly alkaline

C horizon:
Hue—10YR
Value—3 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—fine sandy loam, sandy loam, loam, or silt loam; stratified in some pedons
Content of rock fragments—none
Reaction—slightly alkaline or moderately alkaline

570D2—Martinsville silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Stream terraces
Position on landform: Backslopes

Map Unit Composition

Martinsville and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains

Properties and Qualities of the Martinsville Soil

Parent material: Loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Martinsville—4e
Prime farmland status: Martinsville—not prime farmland
Hydric soil status: Martinsville—not hydric

Mayville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Mayville silt loam, 2 to 5 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 741 feet above mean sea level, in McLean County, Illinois, 587 feet north and 250 feet east of the southwest corner of sec. 8, T. 25 N., R. 2 E.; USGS El Paso, Illinois, topographic quadrangle; latitude 40 degrees 38 minutes 12.7 seconds north and longitude 89 degrees 01 minute 19.7 seconds west; UTM Zone 16T 0328992E 4500196N; NAD 27:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) and brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

EB—6 to 8 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure; very friable; few fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 19 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few fine iron stains on faces of peds in the lower part of the horizon; moderately acid; clear smooth boundary.

Bt2—19 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine iron

stains on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.

2Bt3—27 to 34 inches; brown (10YR 5/3) clay loam; moderate coarse subangular blocky structure; firm; few fine roots; few faint very dark gray (10YR 3/1) organo-clay films on faces of peds and in root channels; common medium masses that have accumulated iron and are on faces of peds; few fine faint dark yellowish brown (10YR 4/4) masses that have accumulated iron and manganese and are in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

2C—34 to 60 inches; pale brown (10YR 6/3) loam; massive; friable; common medium masses that have accumulated iron and are on faces of peds; few medium distinct gray (10YR 5/1) iron depletions in the matrix; 5 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BE or EB horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

B horizon:
Hue—10YR
Value—3 or 4
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2B horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—clay loam, loam, or sandy clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

2C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam, sandy loam, fine sandy loam, or the gravelly analogs of those textures
Content of rock fragments—3 to 30 percent gravel and 0 to 5 percent cobbles, by volume
Reaction—slightly alkaline or moderately alkaline

193B2—Mayville silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Mayville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have a loamy substratum at a greater depth
- Soils that have a slope of 5 to 7 percent

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Mayville Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 44 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April

Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Mayville—2e
Prime farmland status: Mayville—prime farmland in all areas
Hydric soil status: Mayville—not hydric

193C2—Mayville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Mayville and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have a loamy substratum at a greater depth
- Soils that have a slope of 3 to 5 percent

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Mayville Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 44 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Mayville—3e
Prime farmland status: Mayville—not prime farmland
Hydric soil status: Mayville—not hydric

Miami Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Miami silt loam, 10 to 18 percent slopes, eroded, on a 12 percent slope, in an area of woodland, at an elevation of 845 feet above mean sea level, in McLean County, Illinois, 1,500 feet north and 1,400 feet east of the southwest corner of sec. 26, T. 23 N., R. 4 E.; USGS Arrowsmith, Illinois, topographic quadrangle; latitude 40 degrees 25 minutes 03.1 seconds north and longitude 88 degrees 43 minutes 16.7 seconds west; UTM Zone 16T 0353961E 4475311N; NAD 27:

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam mixed with dark grayish brown (10YR 4/2) subsurface material; pale brown (10YR 6/3) dry; weak fine subangular blocky structure; friable; few fine roots; neutral; abrupt smooth boundary.

Bt1—4 to 12 inches; brown (10YR 5/3) silty clay loam; weak fine and medium subangular blocky structure; friable; few fine roots; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear wavy boundary.

2Bt2—12 to 19 inches; brown (10YR 5/3) clay loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent iron and manganese concretions and stains throughout; 5 percent fine gravel; moderately acid; clear wavy boundary.

2Bt3—19 to 28 inches; brown (10YR 5/3) clay loam; moderate medium angular blocky structure; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine prominent iron and manganese concretions and stains throughout; 5 percent fine gravel; neutral; clear wavy boundary.

2BCt—28 to 33 inches; light olive brown (2.5Y 5/4)

clay loam; weak medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine prominent iron and manganese concretions and stains throughout; 5 percent fine gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cd—33 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; friable; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine and medium prominent iron and manganese concretions and stains throughout; 10 percent fine and medium gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam or loam
Content of rock fragments—none
Reaction—neutral or slightly alkaline

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam or loam
Content of rock fragments—none
Reaction—moderately acid or slightly acid

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid or slightly acid

2B or 2BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—clay loam
Content of rock fragments—1 to 10 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture of the fine-earth fraction—loam
Content of rock fragments—1 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

27B2—Miami silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Miami and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have excess lime at or near the surface
- Soils that have a sandy substratum

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Drummer soils in swales

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami—2e
Prime farmland status: Miami—prime farmland in all areas
Hydric soil status: Miami—not hydric

27C2—Miami silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Miami and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have excess lime at or near the surface
- Soils that have a sandy substratum

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Drummer soils in swales

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami—3e
Prime farmland status: Miami—not prime farmland
Hydric soil status: Miami—not hydric

27D2—Miami silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Miami and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have excess lime at or near the surface
- Soils that have a sandy substratum

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami—4e
Prime farmland status: Miami—not prime farmland
Hydric soil status: Miami—not hydric

964D—Miami and Hennepin soils, 10 to 18 percent slopes

Setting

Landform: End moraines
Position on landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 45 percent
Miami and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have a thin subsoil of clayey material
- Soils that have a sandy and/or gravelly substratum

Dissimilar soils:
- Soils that are severely eroded
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight in forested areas
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Properties and Qualities of the Hennepin Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 20 inches
Available water capacity: About 6.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Accelerated erosion: None or slight in forested areas
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami and Hennepin—4e
Prime farmland status: Miami and Hennepin—not prime farmland
Hydric soil status: Miami and Hennepin—not hydric

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 45 percent
Miami and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are moderately eroded
- Soils that have a thin subsoil of clayey material
- Soils that have a sandy and/or gravelly substratum

Dissimilar soils:
- Soils that are severely eroded
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight in forested areas; moderate or severe in areas of cropland
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Properties and Qualities of the Hennepin Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 10 to 20 inches
Available water capacity: About 6.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Accelerated erosion: None or slight in forested areas
Potential for frost action: Moderate
Risk of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Miami and Hennepin—6e
Prime farmland status: Miami and Hennepin—not prime farmland
Hydric soil status: Miami and Hennepin—not hydric

MW—Miscellaneous water

These areas are covered with water in most years, at least during the period that is warm enough for plants to grow. Many areas are covered throughout the year. Typically, this unit includes sewage lagoons, animal waste lagoons, and water treatment facilities.

Muscatune Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Muscatune silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 879 feet above mean sea level, in Winnebago County, Illinois, about 3 miles east and 1.5 miles south of Seward; 450 feet east and 222 feet south of the northwest corner of sec. 36, T. 26 N., R. 10 E.; USGS Seward, Illinois, topographic quadrangle; latitude 42 degrees 13 minutes 00.1 second north and longitude 89 degrees 17 minutes 51.7 seconds west; UTM Zone 16T 0310347E 4676178N; NAD 27:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, very dark brown (10YR 2/2) crushed, dark gray (10YR 4/1) dry; weak medium granular structure; very friable; common fibrous roots; moderately acid; abrupt smooth boundary.
A1—6 to 11 inches; black (10YR 2/1) silt loam, very dark brown (10YR 2/2) crushed, dark gray (10YR 4/1) dry; weak thin platy structure parting to weak fine and medium granular; friable; common fibrous roots; moderately acid; clear smooth boundary.
A2—11 to 16 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) crushed, dark grayish brown (10YR 4/2) dry; weak medium platy structure parting to weak medium granular; friable; common fibrous roots; common worm burrows; few fine iron and manganese concretions; moderately acid; gradual smooth boundary.
BA—16 to 22 inches; dark brown (10YR 3/3) silty clay loam; weak fine subangular blocky structure; friable; common distinct very pale brown (10YR 8/2 dry) silt coatings on faces of peds; common fibrous roots; common worm burrows; few fine iron and manganese concretions; moderately acid; gradual smooth boundary.
Btg1—22 to 28 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; few distinct very pale brown (10YR

8/2 dry) silt coatings on faces of peds; few roots and worm burrows; common fine iron and manganese concretions; moderately acid; clear smooth boundary.

Btg2—28 to 33 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; few roots; few worm burrows; few distinct very pale brown (10YR 8/2 dry) silt coatings on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few medium prominent dark reddish brown (5YR 3/2) masses that have accumulated iron and manganese and are on faces of peds; few iron and manganese concretions; moderately acid; clear smooth boundary.

Btg3—33 to 40 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few roots; few worm burrows; common faint grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/6) masses that have accumulated iron and are in the matrix; many fine prominent dark reddish brown (5YR 3/2) masses that have accumulated iron and manganese and are on faces of peds; many fine iron and manganese concretions; moderately acid; gradual smooth boundary.

Btg4—40 to 46 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate coarse subangular and angular blocky structure; firm; common faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; few roots; few worm burrows; many fine prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/6) masses that have accumulated iron and are in the matrix; many fine prominent dark reddish brown (5YR 3/2) masses that have accumulated iron and managaese and are on faces of peds; many iron and manganese concretions; moderately acid; clear wavy boundary.

BCtg—46 to 75 inches; variegated light brownish gray (10YR 6/2), grayish brown (10YR 5/2), and yellowish brown (10YR 5/6) silt loam; moderate very coarse subangular blocky structure; friable; few prominent grayish brown (2.5Y 5/2) clay films on faces of peds; many fine distinct very dark brown (10YR 2/2) threads throughout; few very coarse distinct very dark brown (10YR 2/2) krotovinas; slightly acid; abrupt smooth boundary.

C—75 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; strongly effervescent (25.2 percent calcium carbonate equivalent); slightly alkaline.

Range in Characteristics

Content of clay in the control section: 30 to 35 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid or slightly acid

BC or C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—neutral to moderately alkaline

51A—Muscatune silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Muscatune and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils with more clay in the subsoil
- Soils with loamy outwash or till in the substratum

Dissimilar soils:
- The poorly drained Edgington soils in closed depressions

- The well drained Osco soils on rises above the Muscatune soil
- The poorly drained Sable soils in swales

Properties and Qualities of the Muscatune Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Muscatune—1
Prime farmland status: Muscatune—prime farmland in all areas
Hydric soil status: Muscatune—not hydric

Normal Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Normal silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 695 feet above mean sea level, in McLean County, Illinois, about 4 miles southwest of Danvers, 1,650 feet south and 2,310 feet east of the northwest corner of sec. 32, T. 24 N., R. 1 W.; USGS Stanford, Illinois, topographic quadrangle; latitude 40 degrees 29 minutes 45.3 seconds north and longitude 89 degrees 14 minutes 22 seconds west; UTM Zone 16T 0310219E 4484997N; NAD 27:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; few fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.

E—11 to 20 inches; grayish brown (10YR 5/2) silt loam; moderate thin and medium platy structure; friable; few very fine roots; common medium prominent masses that have accumulated manganese and are along faces of peds; common fine faint brown (10YR 4/3) masses that have accumulated iron and manganese and are in the matrix; strongly acid; clear wavy boundary.

Bt1—20 to 28 inches; brown (10YR 4/3) and yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent masses that have accumulated iron and managaese and are along faces of peds; common fine and medium distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; strongly acid; gradual wavy boundary.

Bt2—28 to 37 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; many distinct grayish brown (10YR 5/2) and common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine and medium prominent iron and manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual wavy boundary.

Bt3—37 to 52 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure; friable; few distinct dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels; many fine and medium prominent iron and manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; few black krotovinas; moderately acid; gradual wavy boundary.

C—52 to 75 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct brown (10YR

4/3) coatings lining root channels; many fine and prominent iron and manganese concretions throughout; few black krotovinas; slightly acid; abrupt smooth boundary.

2C—75 to 80 inches; dark grayish brown (10YR 4/2) gravelly sandy loam; single grain; loose; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few medium prominent iron concretions throughout; neutral.

Range in Characteristics

Content of clay in the control section: 25 to 35 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 5
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 5
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BC or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 5
Chroma—1 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—slightly acid to moderately alkaline

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 5
Chroma—1 to 6
Texture of the fine-earth fraction—sandy loam or loam
Content of rock fragments—15 to 35 percent, by volume
Reaction—neutral to moderately alkaline

213A—Normal silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Summits

Map Unit Composition

Normal and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have a loamy or sandy substratum closer to the surface

Dissimilar soils:
- The poorly drained Edgington soils in swales and depressions

Properties and Qualities of the Normal Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Normal—1
Prime farmland status: Normal—prime farmland in all areas
Hydric soil status: Normal—not hydric

Orthents

Taxonomic classification: Fine-loamy, mixed, active, nonacid, mesic Aquic Udorthents

These soils have been extensively modified by cutting, filling, and leveling. They are in residential and industrial areas, near interstate interchanges and airports, along railroads, and in fill areas. The fill material is typically silty clay loam, silt loam, loam, or clay loam.

802B—Orthents, loamy, undulating

Setting

Landform: Leveled land and areas of cut or fill

Map Unit Composition

Orthents, loamy, and similar soils: 85 percent
Dissimilar soils and miscellaneous areas: 15 percent

Minor Components

Similar soils:
- Soils that are silty or clayey

Dissimilar components:
- Small areas of Urban land
- The somewhat poorly drained Flanagan, Ipava, and Raub soils on ground moraines
- The poorly drained Drummer soils on outwash plains

Properties and Qualities of Orthents, Loamy

Parent material: Earthy fill
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 3.3 to 6.0 feet, Feb.–April
Flooding: None
Accelerated erosion: Typically none or slight, but severe where the plant cover is sparse
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Orthents, loamy—2e
Prime farmland status: Orthents, loamy—not prime farmland
Hydric soil status: Orthents, loamy—not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 858 feet above mean sea level, in Carroll County, Illinois, about 3.5 miles east and 3.25 miles south of Lanark, 88 feet west and 316 feet north of the southeast corner of sec. 23, T. 24 N., R. 6 E.; USGS Lanark, Illinois, topographic quadrangle; latitude 42 degrees 03 minutes 13.4 seconds north and longitude 89 degrees 45 minutes 48.2 seconds west; UTM Zone 16T 0271320E 4659225N; NAD 27:

Ap—0 to 10 inches; very dark brown (10YR 2/2) and black (10YR 2/1) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; strongly acid; clear smooth boundary.

BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; few distinct light brownish gray (10YR 6/2 dry) silt coatings on faces of peds; many roots and common earthworm casts and holes; strongly acid; clear smooth boundary.

Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common faint dark brown (10YR 3/3) organo-clay films; few distinct gray (10YR 6/1 dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many faint dark yellowish brown (10YR 4/4) clay films and common distinct light brownish gray (10YR 6/2 dry) silt coatings on faces of peds; common fine faint brown (10YR 5/3) iron

depletions in ther matrix; common medium prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; many very dark gray (N 3/) and dark brown (7.5YR 3/2) iron and manganese concretions throughout; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; few medium prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; many prominent dark brown (7.5YR 3/2) iron and manganese concretions throughout; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4 and 5/6) and brown (10YR 4/3) silt loam; massive; some vertical partings; friable; many fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: More than 48 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

B horizon:
Hue—10YR
Value—3 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

BC and C horizons:
Hue—mainly 10YR; 2.5Y below a depth of 40 inches in some pedons
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

Taxadjunct Features

Osco silt loam, 2 to 5 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. Also, the soil is slightly wetter. These differences, however, do not significantly affect the use, management, or interpretations of the soil. The soil is a fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf.

86A—Osco silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum
- Soils that have excess lime within a depth of 48 inches

Dissimilar soils:
- The poorly drained Sable soils in swales
- The poorly drained Edgington soils in closed depressions

Properties and Qualities of the Osco Soil

Parent material: Silty loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 4.0 to 6.0 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High

Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Osco—1
Prime farmland status: Osco—prime farmland in all areas
Hydric soil status: Osco—not hydric

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or shoulders

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum
- Soils that have excess lime within a depth of 48 inches

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 4.0 to 6.0 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Osco—2e
Prime farmland status: Osco—prime farmland in all areas
Hydric soil status: Osco—not hydric

86B2—Osco silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Osco and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum
- Soils that have excess lime within a depth of 48 inches

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Osco Soil

Parent material: Silty loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Osco—2e
Prime farmland status: Osco—prime farmland in all areas
Hydric soil status: Osco—not hydric

Penfield Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls

Taxadjunct Feature

The Penfield soils in this survey area are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine-loamy, mixed, active, mesic Mollic Hapludalfs.

Typical Pedon

Penfield loam, 5 to 10 percent slopes, eroded, on a 7 percent slope, in a cultivated field, at an elevation of 724 feet above mean sea level, in McLean County, Illinois, 145 feet south and 1,810 feet east of the northwest corner of sec. 9, T. 23 N., R. 1 E.; USGS Bloomington West, Illinois, topographic quadrangle; latitude 40 degrees 28 minutes 20.1 seconds north and longitude 89 degrees 06 minutes 32 seconds west; UTM Zone 16T 0321221E 4482098N; NAD 27:

Ap—0 to 7 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; friable; common fine roots; slightly alkaline; abrupt smooth boundary.

BA—7 to 13 inches; brown (10YR 4/3) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; friable; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; clear smooth boundary.

Bt1—13 to 26 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) clay loam; moderate coarse subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; neutral; clear smooth boundary.

BC—37 to 42 inches; dark yellowish brown (10YR 4/4) sandy loam; weak coarse subangular blocky structure; very friable; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; neutral; clear smooth boundary.

C—42 to 60 inches; dark yellowish brown (10YR 4/4), stratified sandy loam to coarse sand; single grain; loose; common fine distinct dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/4) masses that have accumulated iron and manganese and are in the matrix; 1 percent gravel; neutral.

Range in Characteristics

Content of clay in the control section: 20 to 33 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

B horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam, clay loam, silty clay loam, or sandy clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—strongly acid to neutral

BC and C horizons:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—sandy loam, fine sandy loam, loam, or coarse sand; stratified in some pedons
Content of rock fragments—0 to 15 percent, by volume
Reaction—neutral to moderately alkaline

687B2—Penfield loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Summits or backslopes

Map Unit Composition

Penfield and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 6.0 feet

- Soils that have a silty subsoil

Dissimilar soils:
- The poorly drained Drummer and Selma soils in swales

Properties and Qualities of the Penfield Soil

Parent material: Loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 3.5 to 6.0 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Penfield—2e
Prime farmland status: Penfield—prime farmland in all areas
Hydric soil status: Penfield—not hydric

687C2—Penfield loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Backslopes or shoulders

Map Unit Composition

Penfield and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 6.0 feet
- Soils that have a silty subsoil

Dissimilar soils:
- The poorly drained Drummer and Selma soils in swales

Properties and Qualities of the Penfield Soil

Parent material: Loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 3.5 to 6.0 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Penfield—3e
Prime farmland status: Penfield—not prime farmland
Hydric soil status: Penfield—not hydric

Peotone Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 692 feet above mean sea level, in Macon County, Illinois, 310 feet north and 2,435 feet west of the center of sec. 13, T. 14 N., R. 3 E.; USGS Dalton City, Illinois, topographic quadrangle; latitude 39 degrees 39 minutes 40.5 seconds north and longitude 88 degrees 49 minutes 43.3 seconds west; UTM Zone 16T 0343125E 4391552N; NAD 27:

Ap—0 to 6 inches; black (5Y 2.5/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; firm; neutral; clear smooth boundary.

A—6 to 14 inches; black (5Y 2.5/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine subangular blocky structure; moderate medium angular blocky compaction zone in the upper 2 inches; firm; neutral; clear smooth boundary.
AB—14 to 22 inches; very dark gray (5Y 3/1) silty clay loam, gray (5Y 5/1) dry; moderate fine angular blocky structure; firm; many faint black (5Y 2.5/1) organic coatings on faces of peds; neutral; clear smooth boundary.
BA—22 to 28 inches; very dark gray (5Y 3/1) silty clay loam, gray (5Y 5/1) dry; moderate fine prismatic structure; firm; few medium rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide nodules throughout; neutral; clear smooth boundary.
Bg1—28 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few fine faint gray (5Y 5/1) iron depletions in the matrix; few medium rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide nodules throughout; neutral; clear smooth boundary.
Bg2—36 to 44 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure; firm; common fine prominent light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine and medium rounded black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide nodules throughout; neutral; gradual smooth boundary.
BCg—44 to 60 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure; firm; common medium prominent strong brown (7.5YR 5/6) and light yellowish brown (2.5Y 6/4) masses that have accumulated iron and are in the matrix; common krotovinas with dark coatings on vertical faces of prisms; violently effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 45 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam or silty clay
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to slightly alkaline

BCg or Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silt loam, silty clay loam, or silty clay; stratified in some pedons
Content of rock fragments—0 to 2 percent, by volume
Reaction—neutral to moderately alkaline

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Closed depressions

Map Unit Composition

Peotone and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a silty subsurface layer
- Soils that are poorly drained

Dissimilar soils:
- The somewhat poorly drained Flanagan and Elburn soils on rises above the Peotone soil

Properties and Qualities of the Peotone Soil

Parent material: Clayey colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–June
Ponding: At the surface to 1.0 foot above the surface, Jan.–June

Flooding: None
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Peotone—3w
Prime farmland status: Peotone—prime farmland where drained
Hydric soil status: Peotone—hydric

865—Pits, gravel

This map unit consists of excavations from which sand and gravel have been or are being removed. It includes the areas directly surrounding the excavations. Abandoned or stabilized gravel pits may have soils that support vegetation. These soils typically are moderately coarse textured or coarse textured and have little or no organic material.

Setting

Landform: Stream terraces and outwash plains

Map Unit Composition

Pits, gravel: 95 percent
Dissimilar components: 5 percent

Dissimilar Components

- The poorly drained Selma, somewhat poorly drained Kane, and well drained Warsaw, Fox, and Lorenzo soils in areas that were overlooked in the mining process or in areas that have been preserved near the edges of the unit for esthetic or other purposes
- Water at the bottom of the pits

Properties and Qualities of Pits, Gravel

Kind of material: Sand and gravel
Drainage class: Variable, but typically well drained
Slowest permeability within a depth of 40 inches: Rapid or very rapid
Permeability below a depth of 60 inches: Rapid or very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: Less than 3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0 to 0.5 percent
Shrink-swell potential: Low
Flooding: None
Potential for frost action: Low
Surface runoff class: Slow
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight or moderate

Interpretive Groups

Land capability classification: Pits, gravel—8
Prime farmland status: Pits, gravel—not prime farmland
Hydric soil status: Pits, gravel—unranked

Plano Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Plano silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 715 feet above mean sea level, in Stark County, Illinois, 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; USGS Castleton, Illinois, topographic quadrangle; latitude 41 degrees 01 minute 45 seconds north and longitude 89 degrees 39 minutes 00 seconds west; UTM Zone 16T 0277212E 4545166N; NAD 27:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.
A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.
Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3 dry) silt coatings on faces of peds; few fine faint yellowish brown (10YR 5/4) masses that have

accumulated iron and manganese and are in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3 dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BC—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay films bridging sand grains; 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; 12 percent gravel; neutral.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—slightly acid or neutral

B horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2B horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture of the fine-earth fraction—clay loam, sandy clay loam, loam, sandy loam, loamy sand, or silt loam
Content of rock fragments—2 to 14 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—sandy loam, loam, loamy sand, silt loam, or the gravelly analogs of those textures; stratified in some pedons
Content of rock fragments—5 to 25 percent, by volume
Reaction—moderately acid to moderately alkaline

Taxadjunct Feature

Plano silt loam, 2 to 5 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soil. The soil is a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains or stream terraces
Position on landform: Summits

Map Unit Composition

Plano and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales
- The somewhat poorly drained Elburn soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate

Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Plano—1
Prime farmland status: Plano—prime farmland in all areas
Hydric soil status: Plano—not hydric

199B—Plano silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains or stream terraces
Position on landform: Summits

Map Unit Composition

Plano and similar soils: 91 percent
Dissimilar soils: 9 percent

Minor Components

Similar soils:
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales
- The somewhat poorly drained Elburn soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Plano—2e
Prime farmland status: Plano—prime farmland in all areas
Hydric soil status: Plano—not hydric

199B2—Plano silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Shoulders

Map Unit Composition

Plano and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a silty substratum

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Plano—2e
Prime farmland status: Plano—prime farmland in all areas

Hydric soil status: Plano—not hydric

Proctor Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct Feature

The Proctor soils in this survey area are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Proctor silt loam, 2 to 5 percent slopes, eroded, on a 2.5 percent slope, in a cultivated field, in McLean County, Illinois, 1,850 feet north and 1,100 feet east of the southwest corner of sec. 25, T. 25 N., R. 6 E.; USGS Sibley, Illinois, topographic quadrangle; latitude 40 degrees 35 minutes 35.2 seconds north and longitude 88 degrees 28 minutes 27.8 seconds west; UTM Zone 16T 0375238E 4494421 N; NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine and fine granular structure; friable; common very fine roots; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; abrupt smooth boundary.

BA—9 to 13 inches; brown (10YR 4/3) and dark brown (10YR 3/3) silt loam; moderate very fine subangular blocky structure parting to moderate fine granular; friable; common very fine and few fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; neutral; abrupt smooth boundary.

Bt1—13 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine and few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; neutral; clear smooth boundary.

Bt2—21 to 32 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine and few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; slightly acid; gradual smooth boundary.

2Bt3—32 to 38 inches; yellowish brown (10YR 5/6) loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine and few fine roots; common distinct dark yellowish brown (10YR 4/4) and few distinct brown (7.5YR 4/4) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 2 percent gravel; slightly acid; clear smooth boundary.

2Bt4—38 to 49 inches; dark yellowish brown (10YR 4/4) loam with strata of clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common very fine and few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent masses that have accumulated iron and manganese and are throughout the horizon; 2 percent gravel; slightly acid; gradual smooth boundary.

2BC—49 to 60 inches; dark yellowish brown (10YR 4/4) sandy clay loam with strata of loam and loamy sand; weak coarse subangular blocky structure; friable; few very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and between sand grains; 10 percent gravel; slightly acid.

Range in Characteristics

Content of clay in the control section: 25 to 35 percent
Depth to carbonates: More than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loam, sandy loam, sandy clay loam, clay loam, or silt loam; stratified in some pedons
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—sandy clay loam, sandy loam, loam, or the gravelly analogs of those textures; stratified in some pedons
Content of rock fragments—0 to 18 percent, by volume
Reaction—slightly acid to slightly alkaline

148B2—Proctor silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Summits or backslopes

Map Unit Composition

Proctor and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum at a greater depth
- Soils that have a loamy subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Proctor Soil

Parent material: Silty loess over loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Proctor—2e
Prime farmland status: Proctor—prime farmland in all areas
Hydric soil status: Proctor—not hydric

148C2—Proctor silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains
Position on landform: Backslopes

Map Unit Composition

Proctor and similar soils: 87 percent
Dissimilar soils: 13 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum at a greater depth
- Soils that have a loamy subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Proctor Soil

Parent material: Silty loess over loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Proctor—3e
Prime farmland status: Proctor—not prime farmland
Hydric soil status: Proctor—not hydric

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, occasionally flooded, on a nearly level slope, in a cultivated field, at an elevation of 673 feet above mean sea level, in Bureau County, Illinois, 1,109 feet west and 1,254 feet south of the northeast corner of sec. 23, T. 17 N., R. 8 E.; USGS Buda, Illinois, topographic quadrangle; latitude 41 degrees 26 minutes 55.3 seconds north and longitude 89 degrees 32 minutes 04 seconds west; UTM Zone 16T 0288287E 4591460N; NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.
A—9 to 21 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; few fine dark masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; gradual smooth boundary.
AC—21 to 29 inches; stratified very dark gray (10YR 3/1) silt loam and brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine dark masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.
Ab1—29 to 36 inches; black (10YR 2/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint very dark grayish brown (10YR 3/2) masses that have accumulated manganese and are in the matrix; few very fine dark masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear smooth boundary.
Ab2—36 to 43 inches; black (10YR 2/1) silty clay loam; weak medium subangular blocky structure; friable; few fine faint very dark grayish brown (10YR 3/2) masses that have accumulated manganese and are in the matrix; few very fine dark masses that have accumulated iron and manganese and are throughout the horizon; neutral; clear smooth boundary.
ABb—43 to 60 inches; black (10YR 2/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few very fine dark masses that have accumulated iron and manganese and are throughout the horizon; neutral.

Range in Characteristics

Content of clay in the control section: 18 to 27 percent
Depth to carbonates: More than 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

AC or C horizon:
Hue—10YR
Value—2 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to slightly alkaline

Ab horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to slightly alkaline

ABb or Bb horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam, silt loam, clay loam, or loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to slightly alkaline

8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Radford and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that do not have a dark substratum

Dissimilar soils:
- Moderately well drained soils that contain much more sand in the subsoil
- Soils that are not subject to flooding
- The poorly drained Sawmill soils in swales

Properties and Qualities of the Radford Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Radford—2w
Prime farmland status: Radford—prime farmland in all areas
Hydric soil status: Radford—not hydric

Raub Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Raub silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 680 feet above mean sea level, in Champaign County, Illinois, 2,550 feet north and 1,690 feet east of the southwest corner of sec. 19, T. 20 N., R. 14 W.; USGS Royal, Illinois, topographic quadrangle; latitude 40 degrees 10 minutes 40 seconds north and longitude 87 degrees 59 minutes 18 seconds west; UTM Zone 16T 0415855E 4447951N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and very fine subangular blocky structure; friable; slightly acid; clear smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; slightly acid; clear smooth boundary.

Bt1—18 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few distinct very dark gray (10YR 3/1) organo-clay films lining pores; many distinct grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct and prominent yellowish brown (10YR 5/6 and 5/8) masses that have accumulated iron and are in the matrix; moderately acid; abrupt smooth boundary.

Bt2—22 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; strong fine and medium angular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct dark grayish brown (10YR 4/2) and faint brown (10YR 5/3) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented manganese oxide nodules throughout; slightly acid; clear smooth boundary.

2Bt3—32 to 40 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky

structure; firm; common distinct black (10YR 2/1) organo-clay films lining root channels; few coarse prominent light olive gray (5Y 6/2) iron depletions in the matrix; many fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; many medium irregular black (7.5YR 2.5/1) very weakly cemented manganese oxide nodules throughout; 1 percent fine gravel; neutral; clear smooth boundary.

2BC—40 to 50 inches; yellowish brown (10YR 5/4) clay loam; weak medium and coarse subangular blocky structure; firm; many medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese oxide nodules throughout; 1 percent fine gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—50 to 60 inches; yellowish brown (10YR 5/4) and gray (5Y 6/1) loam; massive; firm; common fine distinct and prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; 5 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: 40 to 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—strongly acid to slightly acid

2B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—clay loam, silty clay loam, or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to slightly alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture of the fine-earth fraction—clay loam or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

481A—Raub silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or footslopes

Map Unit Composition

Raub and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a clayey subsoil
- Soils that have excess lime within a depth of 40 inches

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Raub Soil

Parent material: Silty loess over loamy till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 70 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High

Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Raub—1
Prime farmland status: Raub—prime farmland in all areas
Hydric soil status: Raub—not hydric

Ross Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Ross loam, 0 to 2 percent, occasionally flooded, on a nearly level slope, in a cultivated field, at an elevation of 665 feet above mean sea level, in McLean County, Illinois, 680 feet north and 2,365 feet east of the southwest corner of sec. 34, T. 25 N., R. 2 E.; USGS Gridley, Illinois, topographic quadrangle; latitude 40 degrees 40 minutes 00.6 second north and longitude 88 degrees 58 minutes 34.2 seconds west; UTM Zone 16T 0332958E 4503439N; NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly alkaline; abrupt smooth boundary.
A1—8 to 16 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; slightly alkaline; clear smooth boundary.
A2—16 to 27 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak coarse subangular blocky structure; friable; slightly alkaline; clear smooth boundary.
A3—27 to 32 inches; very dark grayish brown (10YR 3/2) loam, light brownish gray (10YR 6/2) dry; weak coarse subangular blocky structure; friable; slightly alkaline; clear smooth boundary.
Bw—32 to 39 inches; brown (10YR 4/3) silt loam; few fine faint dark yellowish brown (10YR 4/4) masses that have accumulated iron and manganese and are in the matrix; moderate coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 1 percent fine gravel; slightly alkaline; clear smooth boundary.
C—39 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; few fine distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; massive; friable; slightly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 20 to 27 percent
Depth to carbonates: 24 to 45 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid to slightly alkaline

B horizon:
Hue—10YR
Value—2 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam, loam, or sandy loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam, loam, or sandy loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly acid to moderately alkaline

8073A—Ross loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Ross and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that are silty throughout

Dissimilar soils:
- Soils that are not subject to flooding

- The poorly drained Sawmill soils in swales

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Low
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: Moderate
Risk of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Ross—2w
Prime farmland status: Ross—prime farmland in all areas
Hydric soil status: Ross—not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Taxadjunct Feature

The Rozetta soils in this survey area are taxadjuncts because they are slightly wetter than is defined for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs.

Typical Pedon

Rozetta silt loam, 2 to 5 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 849 feet above mean sea level, in McLean County, Illinois, 1,815 feet east and 2,376 feet south of the northwest corner of sec. 27, T. 23 N., R. 3 E.; USGS Holder, Illinois, topographic quadrangle; latitude 40 degrees 25 minutes 20.3 seconds north and longitude 88 degrees 51 minutes 24.4 seconds west; UTM Zone 16T 0342479E 4476075N; NAD 27:

Ap—0 to 6 inches; brown (10YR 4/3) silt loam mixed with streaks and pockets of dark yellowish brown (10YR 4/4) subsoil material; pale brown (10YR 6/3) dry; weak fine granular structure; friable; moderately acid; abrupt smooth boundary.

Bt1—6 to 25 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine iron and manganese stains and concretions throughout; moderately acid; clear smooth boundary.

Bt2—25 to 40 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium angular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine iron and manganese stains and concretions throughout; moderately acid; clear smooth boundary.

Bt3—40 to 53 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium angular blocky structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; common fine and medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; few fine iron and manganese stains and concretions throughout; neutral; clear smooth boundary.

C—53 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; in the matrix, common fine and medium distinct grayish brown (10YR 5/2) iron depletions and prominent yellowish brown (10YR 5/8) masses that have accumulated iron; few fine iron and manganese stains and concretions throughout; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: More than 50 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid or slightly acid

E horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none

Reaction—strongly acid to neutral

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

279B2—Rozetta silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes, summits, or shoulders

Map Unit Composition

Rozetta and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum
- Soils that have a clayey subsoil
- Soils that have a seasonal high water table at a depth of more than 4 feet

Dissimilar soils:
- The poorly drained Sable soils in swales
- The somewhat poorly drained Keomah soils on toeslopes below the Rozetta soil

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Rozetta—2e
Prime farmland status: Rozetta—prime farmland in all areas
Hydric soil status: Rozetta—not hydric

Russell Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Russell silt loam, 2 to 5 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 754 feet above mean sea level, in McLean County, Illinois, 400 feet north and 2,360 feet east of the southwest corner of sec. 22, T. 22 N., R. 2 E.; USGS Heyworth, Illinois, topographic quadrangle; latitude 40 degrees 20 minutes 32.7 seconds north and longitude 88 degrees 58 minutes 11.2 seconds west; UTM Zone 16T 0332693E 4467415N; NAD 27:

Ap—0 to 6 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

Bt1—6 to 14 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few very fine and fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—14 to 24 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent irregular masses that have accumulated iron and manganese and are

throughout the horizon; strongly acid; clear smooth boundary.

Bt3—24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent irregular masses that have accumulated iron and manganese and are throughout the horizon; strongly acid; clear smooth boundary.

2Bt4—30 to 36 inches; yellowish brown (10YR 5/4) clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct light gray (10YR 7/2 dry) silt coatings on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent irregular masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; moderately acid; clear smooth boundary.

2BCt—36 to 46 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; firm; few very fine roots; few distinct brown (10YR 4/3) clay films and dark brown (10YR 3/3) organo-clay films on faces of peds and in root channels; few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent irregular masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; neutral; gradual smooth boundary.

2C—46 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; common medium distinct light olive brown (2.5Y 5/6) and few fine prominent strong brown (7.5YR 5/8) masses that have accumulated iron and are in the matrix; few fine prominent irregular masses that have accumulated iron and manganese and are throughout the horizon; 1 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 33 percent
Depth to carbonates: 40 to 60 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—strongly acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—very strongly acid or strongly acid

B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—clay loam, silty clay loam, or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—very strongly acid to neutral

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—loam, clay loam, or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

2BC and 2C horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline

322B2—Russell silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Till plains
Position on landform: Backslopes or shoulders

Map Unit Composition

Russell and similar soils: 90 percent

Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum closer to the surface

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Drummer soils in swales

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 60 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Russell—2e
Prime farmland status: Russell—prime farmland in all areas
Hydric soil status: Russell—not hydric

322C2—Russell silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines or end moraines
Position on landform: Shoulders or backslopes

Map Unit Composition

Russell and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a loamy substratum closer to the surface

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Drummer soils in swales

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 40 to 60 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Russell—3e
Prime farmland status: Russell—not prime farmland
Hydric soil status: Russell—not hydric

Sabina Series

Taxonomic classification: Fine, smectitic, mesic Aeric Epiaqualfs

Taxadjunct Feature

The Sabina soils in this survey area are taxadjuncts because they are slightly better drained than is defined for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine, smectitic, mesic Aquic Hapludalfs.

Typical Pedon

Sabina silt loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 843 feet above mean sea level, in McLean County, Illinois, 1,452 feet east and 231 feet north of the southwest corner of sec. 34, T. 23 N., R. 4 E.; USGS Arrowsmith, Illinois, topographic quadrangle; latitude 40 degrees 23 minutes 58.3 seconds north and longitude 88 degrees 44 minutes 24.1 seconds west; UTM Zone 16T 0352333E 4473346N; NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) and dark grayish brown (10YR 4/2) silt loam mixed with pockets of grayish brown (10YR 5/2) material from the subsurface layer; mostly weak fine and medium subangular blocky structure, some thin platy structure in the lower part; friable; slightly acid; abrupt smooth boundary.

E—7 to 14 inches; grayish brown (10YR 5/2) silt loam; moderate medium platy structure; friable; very few distinct light gray (10YR 7/1 dry) and grayish brown (10YR 5/2 dry) silt coatings on faces of peds; common fine prominent iron and manganese stains and concretions throughout; strongly acid; clear smooth boundary.

BE—14 to 18 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine angular blocky and weak medium platy structure; friable; few fine dark brown (10YR 3/3) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; few faint light brownish gray (10YR 6/2 dry) silt coatings on faces of peds; few fine faint gray (10YR 5/1) iron depletions in the matrix; common prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese stains and concretions throughout; strongly acid; clear smooth boundary.

Bt1—18 to 30 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; common distinct brown (10YR 5/3) and grayish brown (10YR 5/2) clay films on faces of peds; few faint light brownish gray (10YR 6/2 dry) silt coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine and medium distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese stains and concretions throughout; slightly acid; gradual wavy boundary.

Bt2—30 to 35 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium faint grayish brown (10YR 5/2) iron depletions in the matrix; common distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese stains and concretions throughout; neutral; gradual wavy boundary.

Bt3—35 to 45 inches; brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few distinct dark gray (10YR 4/1) and dark grayish brown (10YR 4/2) clay films on faces of peds and in root channels; common fine and medium faint grayish brown (10YR 5/2) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine prominent iron and manganese stains and concretions throughout; neutral; abrupt smooth boundary.

2Bt4—45 to 51 inches; olive brown (2.5Y 4/4) loam; weak medium and coarse subangular blocky structure; firm; few faint dark grayish brown (10YR 4/2) clay films and light brownish gray (10YR 6/2 dry) silt coatings lining root channels and pores; few fine and medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; few fine prominent masses of carbonate accumulation throughout; strongly effervescent; slightly alkaline; clear smooth boundary.

2C—51 to 60 inches; olive brown (2.5Y 4/4) loam; massive; firm; few medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—moderately acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—none
Reaction—strongly acid to neutral

B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—none
Reaction—strongly acid to neutral

2B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—neutral or slightly alkaline

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—loam, clay loam, silt loam, or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

236A—Sabina silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Footslopes or summits

Map Unit Composition

Sabina and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table closer to the surface
- Soils that have a silty substratum
- Soils that have a thicker and darker surface layer

Dissimilar soils:
- The poorly drained Sable soils in swales
- The moderately well drained Birkbeck soils on backslopes above the Sabina soil

Properties and Qualities of the Sabina Soil

Parent material: Silty loess over loamy till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 44 to 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.5 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Sabina—1
Prime farmland status: Sabina—prime farmland in all areas
Hydric soil status: Sabina—not hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 732 feet above mean sea level, in Warren County, Illinois, about 3 miles northwest of Roseville, 97 feet west and 1,281 feet south of the northeast corner of sec. 14, T. 9 N., R. 3 W.; USGS Kirkwood East, Illinois, topographic quadrangle; latitude 40 degrees 46 minutes 22.4 seconds north and longitude 90 degrees 41 minutes 33.7 seconds west; UTM Zone 15T 0694725E 4515896N; NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.
A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese concretions

throughout; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese concretions throughout; slightly acid; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese concretions throughout; common medium distinct brown (10YR 5/3) masses that have accumulated iron and manganese and are in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of prisms; common fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron and manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—moderately acid to slightly alkaline

C horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—none
Reaction—neutral to moderately alkaline

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Toeslopes

Map Unit Composition

Sable and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils with excess lime at or near the surface
- Soils that have a loamy substratum

Dissimilar soils:
- The somewhat poorly drained Ipava soils on rises above the Sable soil

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent

Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Sable—2w
Prime farmland status: Sable—prime farmland where drained
Hydric soil status: Sable—hydric

902A—Ipava-Sable complex, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits

Map Unit Composition

Ipava and similar soils: 60 percent
Sable and similar soils: 20 percent
Dissimilar soils and miscellaneous areas: 20 percent

Minor Components

Similar soils:
- Soils that have a silty subsoil
- Soils that have a slope of 3 to 5 percent

Dissimilar soils and miscellaneous areas:
- Orthents, loamy, and Urban land in areas where development is intensive
- The very poorly drained Peotone soils in closed depressions
- The moderately well drained Catlin soils on rises above the Ipava soil

Properties and Qualities of the Ipava Soil

Parent material: Silty loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth to an apparent seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Ipava—1; Sable—2w
Prime farmland status: Ipava and Sable—prime farmland where drained
Hydric soil status: Ipava—not hydric; Sable—hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, on a nearly level slope, in a cultivated field, at an elevation of 535 feet above mean

sea level, in Sangamon County, Illinois, about 2 miles west of Rochester, on the flood plain along the South Fork of the Sangamon River, 750 feet east and 300 feet south of the northwest corner of sec. 20, T. 15 N., R. 4 W.; USGS New City, Illinois, topographic quadrangle; latitude 39 degrees 44 minutes 34 seconds north and longitude 89 degrees 34 minutes 15 seconds west; UTM Zone 16S 0279714E 4402160N; NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 millimeters in diameter; slightly acid; clear smooth boundary.

A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 millimeters in diameter; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.

A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; common faint discontinuous very dark gray (10YR 3/1) organic coatings on faces of peds; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses that have accumulated iron and are in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses that have accumulated iron and are in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; thin continuous gray (10YR 5/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; slightly alkaline; clear smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are lining pores; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 35 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to slightly alkaline

B horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam or clay loam
Content of rock fragments—0 to 2 percent, by volume

Reaction—slightly acid to slightly alkaline

C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam, clay loam, loam, or sandy loam; stratified in some pedons
Content of rock fragments—0 to 2 percent, by volume
Reaction—slightly acid to moderately alkaline

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a clayey subsoil
- Soils that have a loamy subsoil

Dissimilar soils:
- Soils that are not subject to flooding

Properties and Qualities of the Sawmill Soil

Parent material: Silty alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Frequency and most likely period of flooding: Frequent, Nov.–June
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Sawmill—3w
Prime farmland status: Sawmill—prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Sawmill—hydric

8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have less clay in the subsoil

Dissimilar soils:
- Soils that are not subject to flooding

Properties and Qualities of the Sawmill Soil

Parent material: Fine-silty alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 7.0 percent
Shrink-swell potential: Moderate
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Frequency and most likely period of flooding: Occasional, Nov.–June
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Sawmill—2w
Prime farmland status: Sawmill—prime farmland where drained
Hydric soil status: Sawmill—hydric

Saybrook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Saybrook silt loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 705 feet above mean sea level, in Bureau County, Illinois, about 3.5 miles south of Manlius, 2,500 feet south and 1,300 feet east of the northwest corner of sec. 3, T. 16 N., R. 7 E.; USGS Manlius, Illinois, topographic quadrangle; latitude 41 degrees 24 minutes 7.2 seconds north and longitude 89 degrees 40 minutes 48.8 seconds west; UTM Zone 16T 0275950E 4586640N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

AB—10 to 15 inches; very dark brown (10YR 2/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; friable; neutral; clear wavy boundary.

Bt1—15 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct very dark brown (10YR 2/2) organo-clay films on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear wavy boundary.

Bt3—26 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; common prominent irregular black (7.5YR 2.5/1) very weakly cemented masses that have accumulated iron and manganese and are throughout the horizon; slightly acid; clear wavy boundary.

Bt4—30 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common prominent irregular black (7.5YR 2.5/1) very weakly cemented masses that have accumulated iron and manganese and are throughout the horizon; neutral; clear wavy boundary.

2Bt5—32 to 36 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; friable; few distinct brown (7.5YR 4/3) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; common distinct irregular black (7.5YR 2.5/1) very weakly cemented masses that have accumulated iron and manganese and are throughout the horizon; slightly effervescent; slightly alkaline; clear wavy boundary.

2C—36 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; many medium prominent yellowish brown (10YR 5/8) masses that have accumulated iron and are in the matrix; many medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; common distinct irregular black (7.5YR 2.5/1) very weakly cemented masses that have accumulated iron and manganese and are throughout the horizon; slightly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 25 to 35 percent
Depth to carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 to 4
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR
Value—3 to 5
Chroma—3 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 2 percent, by volume
Reaction—strongly acid to neutral

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6

Texture of the fine-earth fraction—clay loam, loam, or silty clay loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—loam or silt loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

Taxadjunct Feature

Saybrook silt loam, 2 to 5 percent slopes, eroded, and Saybrook silt loam, 5 to 10 percent slopes, eroded, are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The two soils are fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs.

145B—Saybrook silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have less sand in the lower part of the subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Saybrook Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Saybrook—2e
Prime farmland status: Saybrook—prime farmland in all areas
Hydric soil status: Saybrook—not hydric

145B2—Saybrook silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Saybrook and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have less sand in the lower part of the subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Saybrook Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches

Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Saybrook—2e
Prime farmland status: Saybrook—prime farmland in all areas
Hydric soil status: Saybrook—not hydric

145C2—Saybrook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have less sand in the lower part of the subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Saybrook Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Saybrook—3e
Prime farmland status: Saybrook—not prime farmland
Hydric soil status: Saybrook—not hydric

893B—Catlin-Saybrook silt loams, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Summits or backslopes

Map Unit Composition

Catlin and similar soils: 45 percent
Saybrook and similar soils: 35 percent
Dissimilar soils and miscellaneous areas: 20 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have a slope of 5 to 7 percent

Dissimilar components:
- Orthents, loamy, in areas that are used for landscaping
- Urban land in areas that are built up
- The poorly drained Drummer soils in swales
- Soils that have a slope of more than 7 percent

Properties and Qualities of the Catlin Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 45 to 65 inches
Available water capacity: About 9.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Properties and Qualities of the Saybrook Soil

Parent material: Silty loess over loamy till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Selma Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Selma loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 668 feet above mean sea level, in Lee County, Illinois, 2,511 feet south and 150 feet west of the northeast corner of sec. 3, T. 20 N., R. 8 E.; USGS Dixon West, Illinois, topographic quadrangle; latitude 41 degrees 45 minutes 04.5 seconds north and longitude 89 degrees 33 minutes 16.8 seconds west; UTM Zone 16T 0287593E 4625103N; NAD 27:

Ap—0 to 7 inches; black (N 2.5/) loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few fine roots; 1 percent fine gravel; neutral; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; 1 percent fine gravel; neutral; clear smooth boundary.

AB—12 to 23 inches; very dark gray (10YR 3/1) loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; few fine roots; few dark gray (10YR 4/1) pockets of subsoil material mixed by animal activity; 1 percent fine gravel; neutral; clear smooth boundary.

Bg1—23 to 28 inches; dark gray (5Y 4/1) loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; 1 percent fine gravel; neutral; clear smooth boundary.

Bg2—28 to 35 inches; olive gray (5Y 5/2) silt loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; a krotovina between depths of 33 and 35 inches; neutral; clear smooth boundary.

Bg3—35 to 41 inches; olive gray (5Y 5/2) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.

BCg—41 to 53 inches; olive gray (5Y 5/2) sandy loam; weak medium prismatic structure; very friable; few fine roots; a krotovina between depths of 43 and 44 inches; 1 percent fine and medium gravel; slightly alkaline; clear smooth boundary.

Cg—53 to 60 inches; olive gray (5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; few fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; a krotovina between depths of 54 and 56 inches; 1 percent fine and medium gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 20 to 30 percent
Depth to carbonates: More than 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid or neutral

B and BC horizons:
Hue—10YR, 2.5Y, 5Y or N
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—loam, silt loam, clay loam, or sandy clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—2 to 6
Texture of the fine-earth fraction—sandy loam, loamy sand, loam, silt loam, or sand; stratified in some pedons
Content of rock fragments—0 to 15 percent, by volume
Reaction—neutral to moderately alkaline

125A—Selma loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on landform: Summits

Map Unit Composition

Selma and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils with a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Kane soils on toe slopes and the moderately well drained Penfield soils on rises

Properties and Qualities of the Selma Soil

Parent material: Outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Low
Depth to an apparent seasonal high water table: 0.0 to 1.0 foot, Jan.–May
Ponding: At the surface to 0.5 foot above the surface, Jan.–May
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: High
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Selma—2w
Prime farmland status: Selma—prime farmland where drained
Hydric soil status: Selma—hydric

Strawn Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Strawn loam, 5 to 10 percent slopes, eroded, on an 8 percent slope, in an area of revegetated woodland, at an elevation of 747 feet above mean sea level, in McLean County, Illinois, 297 feet west and 2,046 feet north of the southeast corner of sec. 7, T. 25 N., R. 2 E.; USGS El Paso, Illinois, topographic quadrangle; latitude 40 degrees 38 minutes 26.8 seconds north and longitude 89 degrees 01 minute 26.9 seconds west; UTM Zone 16T 0328835E 4500639N; NAD 27:

Ap—0 to 4 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.
Bt1—4 to 7 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; clear smooth boundary.
Bt2—7 to 14 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; 2

percent fine gravel; slightly alkaline; clear smooth boundary.

Bt3—14 to 18 inches; yellowish brown (10YR 5/4) clay loam; moderate medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; 2 percent fine gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

BCt—18 to 24 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine stains and concretions of iron and manganese; 10 percent fine and medium gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

C—24 to 60 inches; yellowish brown (10YR 5/6) loam; massive; firm; few fine stains and concretions of iron and manganese; 10 percent fine and medium gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 25 to 35 percent
Depth to carbonates: 14 to 24 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—loam
Content of rock fragments—0 to 7 percent, by volume
Reaction—moderately acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or loam
Content of rock fragments—0 to 7 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam, silty clay loam, or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to slightly alkaline

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture of the fine-earth fraction—loam, clay loam, silt loam, or fine sandy loam
Content of rock fragments—0 to 15 percent, by volume
Reaction—slightly alkaline or moderately alkaline

224C2—Strawn loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Strawn and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that are severely eroded
- Soils that have excess lime at or near the surface
- Soils that have a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains

Properties and Qualities of the Strawn Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 16 to 24 inches
Available water capacity: About 6.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Strawn—3e
Prime farmland status: Strawn—not prime farmland
Hydric soil status: Strawn—not hydric

224G—Strawn loam, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Strawn and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have excess lime at or near the surface
- Soils that have a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Radford and Aetna soils on flood plains

Properties and Qualities of the Strawn Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 16 to 24 inches
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Strawn—7e
Prime farmland status: Strawn—not prime farmland
Hydric soil status: Strawn—not hydric

Swygert Series

Taxonomic classification: Fine, mixed, active, mesic Aquic Argiudolls

Taxadjunct Feature

The Swygert soils in this survey area are taxadjuncts because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The soils are fine, mixed, active, mesic Aquollic Hapludalfs.

Typical Pedon

Swygert silty clay loam, 2 to 4 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 705 feet above mean sea level, in Livingston County, Illinois, 1,000 feet west and 100 feet south of the northeast corner of sec. 11, T. 30 N., R. 5 E.; USGS Odell, Illinois, topographic quadrangle; latitude 41 degrees 05 minutes 30.3 seconds north and longitude 88 degrees 36 minutes 28 seconds west; UTM Zone 16T 0364965E 4549972N; NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; mixed with some pockets of dark brown (10YR 4/3) silty clay loam from the subsoil; moderate fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

BA—7 to 12 inches; brown (10YR 5/3) silty clay; moderate fine subangular blocky structure; friable; few very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—12 to 17 inches; grayish brown (10YR 5/2) silty clay; weak fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—17 to 23 inches; grayish brown (10YR 5/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine faint gray (10YR 5/1) iron depletions in the matrix; few fine dark iron and manganese concretions throughout; neutral; clear smooth boundary.

2Bt3—23 to 30 inches; grayish brown (2.5Y 5/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; common faint dark gray (10YR 4/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; few fine faint gray (2.5Y 5/1) iron depletions in the matrix; few fine iron and manganese concretions throughout; 1 percent gravel; neutral; clear smooth boundary.

2Bt4—30 to 39 inches; grayish brown (10YR 5/2) silty clay; weak medium prismatic structure parting to moderate fine angular blocky; firm; common faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; many medium prominent light olive brown (2.5Y 5/6) masses that have accumulated iron and are in the matrix; few fine faint gray (2.5Y 5/1) iron depletions in the matrix; 1 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

2BCt—39 to 48 inches; 70 percent light olive brown (2.5Y 5/4) and 30 percent gray (10YR 6/1) silty clay; weak medium prismatic structure; very firm; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; violently effervescent; moderately alkaline; clear smooth boundary.

2Cd—48 to 60 inches; light olive brown (2.5Y 5/4) silty clay; massive; very firm; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common medium white (2.5Y 8/1) masses of carbonate accumulation throughout; 1 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 45 to 50 percent
Depth to carbonates: 15 to 30 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

BA and B horizons:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay or silty clay loam
Content of rock fragments—none
Reaction—moderately acid to neutral

2B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silty clay or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—slightly acid to moderately alkaline

2BC and 2C horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silty clay or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

91B2—Swygert silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Footslopes

Map Unit Composition

Swygert and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils with less clay in the subsoil and substratum
- Soils with a slope of 5 to 6 percent

Dissimilar soils:
- The poorly drained Ashkum soils in swales
- The very poorly drained Peotone soils in closed depressions

Properties and Qualities of the Swygert Soil

Parent material: Clayey till or clayey lacustrine deposits over clayey till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature (dense material): 35 to 55 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent

Shrink-swell potential: High
Depth to a perched seasonal high water table: 1.0 to 2.0 feet, Jan.–May
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Swygert—2e
Prime farmland status: Swygert—prime farmland in all areas
Hydric soil status: Swygert—not hydric

Symerton Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaqic Argiudolls

Typical Pedon

Symerton silt loam, 2 to 5 percent slopes, on a 3 percent slope, in a cultivated field, at an elevation of 714 feet above mean sea level, in Iroquois County, Illinois, about 3 miles northwest of Hoopeston, 102 feet north and 1,806 feet west of the southeast corner of sec. 33, T. 24 N., R. 12 W.; USGS Hoopeston, Illinois, topographic quadrangle; latitude 40 degrees 29 minutes 17.1 seconds north and longitude 87 degrees 42 minutes 57.9 seconds west; UTM Zone 16T 0439311E 4481968N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; weak very fine granular structure; firm; slightly acid; abrupt smooth boundary.

A—10 to 15 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; moderately acid; clear smooth boundary.

AB—15 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—19 to 25 inches; brown (10YR 4/3) gravelly clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented manganese nodules throughout; 18 percent gravel; moderately acid; clear smooth boundary.

2Bt2—25 to 31 inches; brown (10YR 4/3) gravelly clay loam; moderate fine subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented manganese nodules throughout; 18 percent gravel; neutral; clear smooth boundary.

2Bt3—31 to 35 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented manganese nodules throughout; few fine prominent yellowish red (5YR 5/8) masses that have accumulated iron and are in the matrix; 18 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

3Bt4—35 to 39 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish red (5YR 5/8) masses that have accumulated iron and are in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

3C—39 to 60 inches; light olive brown (2.5Y 5/4) and light yellowish brown (2.5Y 6/4) silt loam; massive; firm; few fine prominent yellowish red (5YR 4/8) masses that have accumulated iron and manganese and are in the matrix; few fine prominent gray (10YR 5/1) iron depletions in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Content of clay in the control section: 27 to 34 percent
Depth to carbonates: 24 to 50 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4

Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid or slightly acid

2B horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, clay loam, gravelly loam, or gravelly clay loam
Content of rock fragments—0 to 20 percent, by volume
Reaction—moderately acid to slightly alkaline

3B horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, silty clay loam, clay loam, loam, or the gravelly analogs of those textures
Content of rock fragments—0 to 20 percent, by volume
Reaction—neutral to moderately alkaline

3C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

294B—Symerton silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Symerton and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a clayey subsoil
- Soils that have a slope of less than 2 percent
- Soils that have a clayey substratum closer to the surface

Dissimilar soils:
- The poorly drained Ashkum soils in swales

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and loamy outwash over clayey till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Symerton—2e
Prime farmland status: Symerton—prime farmland in all areas
Hydric soil status: Symerton—not hydric

533—Urban land

Map Unit Composition

Urban land and similar land types: 90 percent
Soils included in mapping: 10 percent

Included Soils

- The poorly drained Drummer soils in swales
- The moderately well drained Orthents, loamy
- The somewhat poorly drained Flanagan soils on slight rises
- The well drained Osco soils on shoulders and backslopes

Properties and Qualities of Urban Land

This map unit occurs as areas covered by pavement and buildings. Because of extensive land smoothing, these areas generally are nearly level or

gently sloping. Most of the paved areas are parking lots adjacent to shopping centers, industrial plants, and other commercial buildings.

Interpretive Groups

Land capability classification: Urban land—none assigned
Prime farmland status: Urban land—not prime farmland
Hydric soil status: Urban land—unranked

Varna Series

Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls

Typical Pedon

Varna silt loam, 2 to 4 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 730 feet above mean sea level, in Ford County, Illinois, 850 feet south and 150 feet east of the northwest corner of sec. 31, T. 29 N., R. 9 E.; USGS Cabery, Illinois, topographic quadrangle; latitude 40 degrees 56 minutes 56 seconds north and longitude 88 degrees 14 minutes 43 seconds west; UTM Zone 16T 0395184E 4533619N; NAD 27:

Ap—0 to 12 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; mixed with dark yellowish brown (10YR 4/4) fragments of subsoil material; moderate fine and medium granular structure; friable; neutral; abrupt smooth boundary.
Bt1—12 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium angular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
Bt2—18 to 27 inches; olive brown (2.5Y 4/4) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct brown (10YR 4/3) clay films on faces of peds; common fine prominent light olive gray (5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; neutral; clear smooth boundary.
BCt—27 to 39 inches; olive brown (2.5Y 4/4) silty clay loam; moderate medium prismatic structure; firm; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; many medium prominent light olive gray (5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses that have accumulated iron and are in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.
Cd—39 to 60 inches; mottled light olive brown (2.5Y 5/4), gray (5Y 6/1), and yellowish brown (10YR 5/6) silty clay loam; massive; very firm; common greenish gray (5GY 6/1) pressure faces; strongly effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 35 to 42 percent
Depth to carbonates: 24 to 42 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—silty clay loam or silty clay
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to slightly alkaline

BC and Cd horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture of the fine-earth fraction—silty clay loam or silt loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—neutral to moderately alkaline
Bulk density—1.7 to 1.9 grams/cc

Taxadjunct Feature

Varna silty clay loam, 4 to 6 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the

use, management, or interpretations of the soil. The soil is a fine, illitic, mesic Oxyaquic Hapludalf.

223B2—Varna silt loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes or summits

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a loamy subsoil
- Soils that have a loamy substratum
- Soils that have a slope of 5 to 6 percent

Dissimilar soils:
- The poorly drained Ashkum soils in swales

Properties and Qualities of the Varna Soil

Parent material: Silty loess over clayey till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature (dense material): 24 to 60 inches
Available water capacity: About 8.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Varna—2e
Prime farmland status: Varna—prime farmland in all areas
Hydric soil status: Varna—not hydric

223C2—Varna silty clay loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines
Position on landform: Backslopes

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a surface layer of silt loam
- Soils that have a loamy subsoil
- Soils that have a loamy substratum
- Soils that have a slope of 7 to 10 percent

Dissimilar soils:
- The poorly drained Ashkum soils in swales

Properties and Qualities of the Varna Soil

Parent material: Silty loess over clayey till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature (dense material): 24 to 60 inches
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: High
Depth to a perched seasonal high water table: 2.0 to 3.5 feet, Feb.–April
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: Varna—3e
Prime farmland status: Varna—not prime farmland
Hydric soil status: Varna—not hydric

Warsaw Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Warsaw loam, 0 to 2 percent slopes, on a nearly level slope, in a cultivated field, at an elevation of 520 feet above mean sea level, in Bureau County, Illinois, 2,300 feet east and 800 feet north of the southwest corner of sec. 9, T. 15 N., R. 9 E.; USGS Princeton South, Illinois, topographic quadrangle; latitude 41 degrees 17 minutes 38.91 seconds north and longitude 89 degrees 27 minutes 43.31 seconds west; UTM Zone 16T 0293849E 4574122N; NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) loam, brown (10YR 4/3) dry; moderate medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

AB—10 to 14 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few fine roots; common faint very dark brown (10YR 2/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—14 to 19 inches; brown (10YR 4/3) loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few very dark brown (10YR 2/2) krotovinas; moderately acid; clear smooth boundary.

Bt2—19 to 26 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds; few very dark brown (10YR 2/2) krotovinas; slightly acid; clear smooth boundary.

2Bt3—26 to 35 inches; brown (7.5YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 18 percent gravel; neutral; clear smooth boundary.

3C—35 to 60 inches; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 17 to 30 percent
Depth to carbonates: 30 to 40 inches

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—loam
Content of rock fragments—0 to 14 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 4
Texture of the fine-earth fraction—loam, sandy clay loam, or silt loam
Content of rock fragments—0 to 14 percent, by volume
Reaction—strongly acid to neutral

2B horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 to 4
Texture—gravelly clay loam or gravelly sandy clay loam
Content of rock fragments—15 to 25 percent, by volume
Reaction—moderately acid to slightly alkaline

2C or 3C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—the very gravelly or gravelly analogs of coarse sand, loamy sand, or sandy loam; stratified in some pedons
Content of rock fragments—15 to 60 percent, by volume
Reaction—slightly alkaline or moderately alkaline

Taxadjunct Feature

Warsaw loam, 2 to 5 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soil. The soil is a fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalf.

290A—Warsaw loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains or outwash terraces

Map Unit Composition

Warsaw and similar soils: 88 percent

Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a thin subsoil and have a substratum of sand and gravel closer to the surface
- Soils that have a thick subsoil and have a substratum of sand and gravel at a depth of more than 60 inches

Dissimilar soils:
- The somewhat poorly drained Kane soils on toeslopes below the Warsaw soil
- The poorly drained Selma soils in swales

Properties and Qualities of the Warsaw Soil

Parent material: Loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature (strongly contrasting textural stratification): 24 to 40 inches
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: None or slight
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Warsaw—2s
Prime farmland status: Warsaw—prime farmland in all areas
Hydric soil status: Warsaw—not hydric

290B2—Warsaw loam, 2 to 5 percent slopes, eroded

Setting

Landform: Outwash plains or terraces
Position on landform: Shoulders

Map Unit Composition

Warsaw and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a thin subsoil and have a substratum of sand and gravel closer to the surface
- Soils that have a thick subsoil and have a substratum of sand and gravel at a depth of more than 60 inches

Dissimilar soils:
- The somewhat poorly drained Kane soils on toeslopes below the Warsaw soil
- The poorly drained Selma soils in swales

Properties and Qualities of the Warsaw Soil

Parent material: Loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature (strongly contrasting textural stratification): 24 to 40 inches
Available water capacity: About 5.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Warsaw—2e
Prime farmland status: Warsaw—prime farmland in all areas
Hydric soil status: Warsaw—not hydric

W—Water

This map unit includes streams, lakes, ponds, and estuaries. Areas of the unit are covered with water in most years, at least during the period that is warm enough for plants to grow. Many areas are covered throughout the year. Gravel pits and other areas that are not defined as miscellaneous water (MW) and that contain water most of the time are mapped as water (W).

Wyanet Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls

Typical Pedon

Wyanet silt loam, 2 to 5 percent slopes, eroded, on a 3 percent slope, in a cultivated field, at an elevation of 820 feet above mean sea level, in Bureau County, Illinois, 440 feet south and 560 feet east of the northwest corner of sec. 7, T. 17 N., R. 8 E.; USGS Buda Northeast, Illinois, topographic quadrangle; latitude 41 degrees 28 minutes 49.9 seconds north and longitude 89 degrees 37 minutes 26.1 seconds west; UTM Zone 16T 0280920E 4595215N; NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.

Bt1—8 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; slightly acid; clear smooth boundary.

2Bt2—16 to 24 inches; brown (7.5YR 5/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; 1 percent fine gravel; slightly acid; clear smooth boundary.

2BC—24 to 32 inches; brown (7.5YR 5/4) loam; weak medium subangular blocky structure; firm; 1 percent fine gravel; slightly alkaline; clear smooth boundary.

2C—32 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; 1 percent fine gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Content of clay in the control section: 22 to 32 percent
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Content of rock fragments—0 to 4 percent, by volume
Reaction—moderately acid to neutral

B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silty clay loam, clay loam, or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to slightly alkaline

2B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—clay loam or loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—moderately acid to neutral

2BC and 2C horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—loam
Content of rock fragments—0 to 10 percent, by volume
Reaction—slightly alkaline or moderately alkaline

Taxadjunct Feature

Wyanet silt loam, 5 to 10 percent slopes, eroded, is a taxadjunct because the dark surface layer is thinner than is defined as the range for the series. This difference, however, does not significantly affect the use, management, or interpretations of the soil. The soil is a fine-loamy, mixed, active, mesic Mollic Hapludalf.

622B2—Wyanet silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines or end moraines
Position on landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have excess lime within a depth of 20 inches
- Soils that have a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Raub soils on toeslopes below the Wyanet soil
- The poorly drained Drummer soils in swales

Properties and Qualities of the Wyanet Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Wyanet—2e
Prime farmland status: Wyanet—prime farmland in all areas
Hydric soil status: Wyanet—not hydric

622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines or end moraines
Position on landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have excess lime within a depth of 20 inches
- Soils that have a silty subsoil

Dissimilar soils:
- The somewhat poorly drained Raub soils on toeslopes below the Wyanet soil
- The poorly drained Drummer soils in swales

Properties and Qualities of the Wyanet Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature (dense material): 24 to 40 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Risk of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Wyanet—3e
Prime farmland status: Wyanet—not prime farmland
Hydric soil status: Wyanet—not hydric

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand, gravel, roadfill, topsoil, and reclamation material. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for cropland and for hay or pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1997, approximately 665,894 acres in McLean County was used as cropland. Of this acreage, 333,205 acres was used for corn for grain or seed, 312,613 acres was used for soybeans, 1,844 acres was used for wheat, 881 acres was used for oats, and 5,919 acres was used for hay. The remaining acreage was used for pasture or alternative or specialty crops (USDA, 1997). The major row crops are corn and soybeans. The major small grain crops are wheat and oats. Forage crops include smooth brome, orchardgrass, alfalfa, and red clover. Specialty crops include maple syrup, fruits, vegetables, sunflowers, trees, and nursery crops.

The soils in McLean County have excellent potential for continued crop production, particularly if the latest crop production technology is applied. This soil survey can be used as a guide in applying the latest technology.

Measures that control erosion and reduce wetness are needed on much of the cropland and pasture in McLean County.

Loss of the surface layer through erosion is damaging in two ways. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. The subsoil generally has fewer plant nutrients, a lower content of organic matter, and a higher content of clay than the surface layer. As the content of organic matter in the tilled layer decreases and the content of clay increases, soil tilth deteriorates. Deterioration of tilth increases the likelihood that a crust will form on the surface and reduces the rate of water infiltration. The higher content of clay increases the likelihood that the surface layer will become cloddy when tilled, especially if tilled when wet. When the surface layer is cloddy, preparing a seedbed is very difficult. The soils tend to puddle after hard rains and crust as they dry. The crust increases the runoff rate. Loss of the surface layer is especially damaging on soils having a subsoil that is unfavorable for plant growth, such as Varna soils; on soils that tend to be droughty, such as Lorenzo soils; and on soils that are moderately eroded, such as Strawn soils.

Second, erosion on farmland results in the sedimentation and pollution of streams. Controlling erosion minimizes this pollution and improves the quality of water for municipal and recreational uses and for fish and wildlife.

Erosion-control measures provide a protective plant cover, increase the rate of water infiltration, and reduce the runoff rate. A cropping system that keeps plants on the surface for extended periods reduces the hazard of erosion and preserves the productive capacity of the soils. Including forage crops of grasses and legumes in the cropping sequence helps to control erosion in the more sloping areas. It also provides nitrogen and improves tilth for the next crop.

Generally, a combination of several practices is needed to control erosion. Conservation tillage, including chisel tillage and no-till farming, is common in McLean County. Contour stripcropping, contour farming, conservation cropping systems, crop residue management, terraces, diversions, buffer strips, riparian areas, and grassed waterways also help to prevent excessive soil loss.

Most of the cropland in McLean County can be protected from erosion by a conservation tillage system. Conservation tillage includes any noninversion tillage practice that keeps a protective amount of crop residue on the surface throughout the year. The crop residue increases the rate of water infiltration by improving tilth. It also protects the surface from the beating action of raindrops, helps to prevent surface crusting, and generally provides a more friable seedbed for good germination (fig. 6).

Chisel tillage is a common form of conservation tillage used in McLean County. When this system is applied, crop residue covers 20 to 60 percent of the surface. The extent of the coverage depends on the type of chisel plow used, the speed with which the equipment moves through the field, and the kind of crop planted. Chisel tillage often follows stalk chopping in the fall, but it can also be used immediately prior to planting in the spring.

No-till farming is being used on an increasing acreage in the county. When this system is applied, a grain crop is planted directly in a cover crop, sod, or

Figure 6.—Corn residue on a Catlin soil. The residue will improve tilth and the nutrient-holding capacity of the soil.

Figure 7.—No-till wheat planted into corn stubble on the well drained Plano silt loam, 2 to 5 percent slopes.

the crop residue of the previous year (fig. 7). A special planter that disturbs only the row area is used. Herbicides are used to control competing vegetation. The nearly complete ground cover protects the soil from the impact of raindrops and helps to control the erosion caused by runoff.

Terraces reduce the hazard of erosion by shortening the slopes and by controlling runoff. If a tile outlet terrace is used, the water that collects behind the terrace is removed by tile at a slow, controlled rate. Grassed waterways reduce the hazard of erosion by providing a stable channel for water runoff on sloping land (fig. 8).

Conservation buffer strips and riparian areas can help to maintain stream channels and slow runoff. A stream channel without trees will slump, whereas a protected riparian area helps to maintain the stream channel (fig. 9).

Contour farming involves conducting tillage or other fieldwork along the contour rather than up and down the slope. This practice helps to control erosion because it results in the formation of small ridges perpendicular to the slope of the land. The ridges greatly reduce the velocity of the water moving down the hills.

Stripcropping, although not used widely in McLean County, is an effective erosion-control measure if used in combination with other measures. It involves alternating rows or strips of one crop with rows of another crop that has a different rate of maturity and a different canopy cover. The rows are planted on the contour. The plant cover that results from this practice helps to control erosion by protecting the surface from the impact of raindrops.

Erosion-control management through tillage and cropping systems is effective alone or in combination on most of the farmland in the county. The combination used and its effectiveness depend on soil characteristics and topography. Information about the design of erosion-control practices for each kind of soil is provided in the Field Office Technical Guide, which is available in the local office of the Natural Resources Conservation Service.

Drainage systems consist of subsurface tile drains, surface inlets, open drainage ditches, or a combination of these. Drainage systems have been installed in most areas of poorly drained and somewhat poorly drained soils in the county (fig. 10). As a result, these soils are adequately drained for the crops commonly grown in the county. Some areas of poorly drained soils require surface tile inlets or shallow surface ditches to remove ponded water. Some areas of somewhat poorly drained soils are wet long enough that in some years productivity is reduced unless a drainage system is installed. Management of drainage in conformance with wetland regulations may require special permits and extra planning.

The design of surface and subsurface drainage systems varies with the kind of soil and the availability of drainage outlets. In some areas of poorly drained soils in depressions, a combination of surface drains and tile drains is needed. The tile should be more closely spaced in the more slowly permeable soils than in the more rapidly permeable soils. Manipulating drainage can allow the producer to conserve moisture, manage weeds and insects, and limit leaching of nutrients and chemicals.

Further information about drainage systems is provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Figure 8.—A grassed waterway in an area of Saybrook silt loam, 5 to 10 percent slopes, eroded.

Limitations and Hazards Affecting Cropland

The main concerns in managing cropland in McLean County are crusting, excess lime, excessive permeability, flooding, limited available water capacity, ponding, poor tilth, restricted permeability, a root-restrictive layer, water erosion, and wetness. Table 6 lists the limitations and hazards affecting cropland on the soils in the county that are in capability classes of 1 through 4.

Crusting occurs when the average content of organic matter in the surface layer is 2.5 percent or less and the content of clay is more than 20 percent and less than or equal to 35 percent. Crusting occurs when flowing water or raindrops break down soil structural units, moving clay downward and leaving a concentration of sand and silt particles on the soil surface. Crusts can reduce the rate of water infiltration, increase the runoff rate, inhibit seedling emergence and growth, and reduce oxygen diffusion to seedlings. Generally, the structure of the surface layer is weak, and a crust forms on the surface during periods of heavy rainfall. Camden, Fincastle, Miami, and Strawn are examples of soils that are subject to crusting because they have a surface layer with a low content of organic matter.

Measures that control surface crusting and improve tilth are those that protect the surface from the impact of raindrops and flowing water. Incorporating green manure crops, manure, or crop residue into the soil and applying a system of conservation tillage improve tilth.

Excess lime is a limitation where the calcium carbonate equivalent is 15 percent or more within 16 inches of the surface. The high content of carbonates affects the availability of many plant nutrients and influences the effectiveness of herbicides. Excess lime is a management concern in areas of Harpster soils.

This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Crops may respond well to additions of phosphate fertilizer. Applications of

Figure 9.—An area of Sawmill and Lawson soils where a permanent cover of grasses, forbs, shrubs, or trees reduces the hazard of bank erosion along the rain-swollen Mackinaw River.

herbicide should be adjusted as the level of alkalinity increases.

Excessive permeability is a limitation where the lower limit of the permeability rate is 6.0 inches or more per hour within the top 60 inches of the soil and the slope is 25 percent or less. Excessive permeability can occur in soils that have high amounts of sand or gravel or that have many large-diameter pores. The capacity of the soils to retain moisture for plant use is limited. Deep leaching of nutrients and pesticides can increase the risk of ground-water pollution. Fox, Lorenzo, and Warsaw are examples of soils that may exhibit excessive permeability.

Irrigation can supply the moisture needed for crops. Frequent applications of a small amount of fertilizer are needed. One application of a large amount can result in excessive loss of plant nutrients through leaching.

Flooding is a hazard where the soil is commonly, occasionally, frequently, or very frequently flooded. Flooding occurs in unprotected areas along the major rivers and their tributaries. Dikes or diversions reduce the extent of the crop damage caused by floodwater. Flooding is a hazard on approximately 35,600 acres in McLean County. Most of the affected soils are occasionally flooded by stream overflow. In these areas flooding is expected infrequently under normal weather conditions, or about 5 to 50 times in 100 years. Damage to crops, particularly winter small grain crops, occurs in some years. Aetna, Huntsville, Lawson, Radford, Ross, and Sawmill are examples of soils that are subject to occasional flooding for brief periods. Some areas of the poorly drained Sawmill soils are frequently flooded for brief periods.

Dikes, levees, and floodwater diversions can protect the adjacent soils and help to prevent crop damage. Surface drainage ditches can help to remove floodwater where suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. The flood-prone soils are better suited to crop varieties that require a relatively short growing season than to other varieties. Planting crops that are adapted to a shorter growing season

Figure 10.—A 10-inch main tile outlet into a surface drainage ditch in an area of Drummer and El Paso silty clay loams, 0 to 2 percent slopes.

and wetter conditions reduces the risk of crop damage caused by floodwater. Controlling runoff from the higher areas within the watershed reduces the frequency and severity of flooding. Changing land use from cropland to pasture or forestland minimizes economic damage.

Limited available water capacity is a limitation where the slope is 25 percent or less and the amount of plant-available water to a depth of 60 inches or to a limiting layer above 60 inches is less than 6 inches. Available water capacity is the volume of water that is be available to plants when the soil is at field capacity. It is important in developing water budgets, predicting droughtiness, designing irrigation systems, protecting water resources, and predicting yields. Fox, Lorenzo, and Warsaw are examples of soils with limited available water capacity.

Increasing the content of organic matter in the surface soil, selecting plant species that are tolerant of drought, applying a system of conservation tillage, using conservation cropping systems, and incorporating green manure crops, manure, or crop residue into the soil can help overcome this limitation.

Ponding is a limitation in areas where the seasonal high water table is above the surface. It occurs for very brief, brief, long, or very long periods. The standing water is removed only by deep percolation or evaporation. Ponding decreases aeration and increases nutrient losses. Ashkum, Drummer, Peotone, and Sawmill soils are subject to ponding.

Land grading helps to control ponding. Surface ditches and surface inlet tile also can help to remove the excess water if suitable outlets are available. Management of drainage in conformance with wetland regulations may require special permits and extra planning.

Poor tilth is a limitation where the content of clay in the surface layer is 27 percent to less than 35 percent and the content of organic matter is less than 4 percent or where the content of clay is 35 percent or more. Poor tilth can occur in areas where the surface soil has been thinned by erosion. In these areas part of the subsoil is incorporated into the plow layer. The incorporation of subsoil material into the plow layer decreases the amount of organic matter and increases the content of clay in the surface soil. During periods of heavy rainfall, a crust commonly forms on the surface. Poor tilth also occurs in poorly drained soils with a high content of clay, regardless of the content of organic matter, and in soils that have been excessively tilled. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. They can be tilled only within a narrow range of moisture content. As a result of the cloddiness, seedbed preparation is difficult. Poor tilth and surface crusting inhibit seedling germination and emergence, increase the runoff rate and the hazard of erosion, and reduce the rate of water infiltration. Sloping fields commonly have clayey spots where the subsoil is exposed. Preparing a good seedbed and tilling are difficult in these spots because the original friable surface layer has been lost through erosion.

Soils that have good tilth are granular and porous and have a high content of organic matter in the surface layer. Plano, Osco, and Clare are examples of soils that are characterized by good tilth. Soils that have poor tilth generally have more clay, a lower content of organic matter, and weaker soil structure in the surface layer. Ashkum and Peotone soils have a surface layer of silty clay loam with more than 35 percent clay. If these soils are plowed when too wet, they become cloddy.

Measures that minimize surface crusting and improve tilth are those that protect the surface from the impact of raindrops and flowing water. Incorporating green manure crops, manure, or crop residue into the soil, regularly adding other organic

material, minimizing tillage, using a system of conservation tillage in which the field is tilled at nearly optimal soil moisture conditions improve tilth. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet or by no-till farming.

Restricted permeability is a limitation where the soil has a very slowly permeable or slowly permeable layer within 40 inches of the surface. The permeability rate is less than 0.2 inch per hour. Permeability is the quality that enables water or air to move through the soil. It affects irrigation and drainage systems, conservation management structures, and plantings. Soils that have slowly permeable or very slowly permeable layers, such as Varna, Elliott, and Swygert soils, have a higher potential for surface runoff and drain more slowly than more permeable soils. Soils with slow or very slow permeability require tile spacing of 50 to 70 feet and may require surface ditches for adequate subsurface drainage.

A *root-restrictive layer* is a limitation where dense material, a natric horizon, bedrock, or a fragipan is within 40 inches of the surface. A root-restrictive layer can increase the susceptibility of the soil to erosion and limit the effectiveness of drainage systems. Root-restrictive layers affect plant growth by limiting the amount of plant nutrients and available water. Dana, Miami, Swygert, and Varna are examples of soils that have dense material within 40 inches of the surface. A combination of conservation measures, including special tillage practices, incorporation of organic matter into the soil, and suitable crop selection, can help to overcome this limitation.

Water erosion is a hazard where the Kw factor multiplied by the slope is more than 0.8 and the slope is 3 percent or more. Erosion can occur when the surface soil is not protected against the impact of raindrops. Erosion reduces soil aggregate stability and thus reduces the rate of water infiltration and increases the rate of surface runoff (Brady, 1984). Soils on long or steep slopes are more susceptible to water erosion than soils on short or gentle slopes. Sheet or rill erosion is a hazard in areas where slopes are more than 2 percent or in areas where slopes are longer or are subject to concentrated flow. Excessive runoff decreases the quality of surface water through sedimentation and contamination by agricultural chemicals attached to soil particles in the sediment. The sediment enters streams, rivers, water impoundments, and road ditches. Water erosion is a hazard on about 37 percent of the total land area in the county. Camden, Catlin, Dana, Miami, and Wyanet are examples of soils that are subject to water erosion.

Erosion can be controlled by a conservation tillage system that leaves crop residue on the surface after planting or by a cropping sequence that includes grasses and legumes. On soils with long, uniform slopes, contour farming and/or terraces in combination with a conservation tillage system can help to control erosion. Control of sedimentation is needed in order to maintain proper drainage. Removal of the sediments is expensive. Management measures that control water erosion help to reduce the extent of sedimentation and improve the quality of water available for rural, municipal, and recreational uses and for fish and wildlife.

Wetness is a limitation where the seasonal high water table is at a depth of 1.5 feet or less. It is a management concern on much of the acreage used for crops in McLean County. Some soils are naturally so wet that the production of crops generally is not possible unless a drainage system is installed. The poorly drained Ashkum, Drummer, Edgington, Elpaso, Harpster, Hartsburg, Peotone, Sable, and Sawmill soils are examples of soils that are limited by wetness. Seasonal wetness in areas of somewhat poorly drained soils, such as Ipava, Flanagan, Lawson, Aetna, and Radford soils, can delay planting in wet years.

Most of the soils in the county that require drainage are already drained by tile, but many drainage systems are old and should be replaced if maximum efficiency is to be achieved. Subsurface drains can help to lower the seasonal high water table if suitable outlets are available. In soils with a high content of clay and restricted permeability, subsurface drainage may not be practical. In these soils surface ditches may help to reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Limitations and Hazards Affecting Pasture

Growing legumes, cool-season grasses, and warm-season grasses that are suited to the soils and climate of the county helps to maintain productive pastures. Suitable pasture and hay plants include several legumes, cool-season grasses, and native warm-season grasses. The legumes commonly grown in the county are alfalfa, red clover, alsike clover, and ladino clover. Alfalfa grows best on well drained soils, such as Proctor and Plano soils, and on moderately well drained soils, such as Catlin and Clare soils. It also is suitable on some of the somewhat poorly drained soils, such as Atterberry, Flanagan, and Raub soils, but wetness can be a limitation. Other legumes, such as alsike clover, red clover, and ladino clover, are more tolerant of the wetter conditions.

The cool-season grasses commonly grown in the county include smooth bromegrass, orchardgrass, and tall fescue. These grasses can be grown alone or in mixtures with legumes. Native warm-season grasses, such as indiangrass, big bluestem, and switchgrass, grow very well in the summer. The management required for warm-season grasses differs from the management required for cool-season grasses.

Proper grazing management is essential for the production of high-quality forage, stand survival, and erosion control. This management helps the plants to maintain sufficient and generally vigorous top growth during the growing season (fig. 11). Brush control is essential in many areas, and weed control is generally needed. Rotational grazing, deferred grazing when the soil is wet, and applications of lime and fertilizer according to the results of soil tests also are important management practices.

The main concerns in managing pasture in McLean County are an equipment limitation, excess lime, flooding, frost heave, limited available water capacity, low pH, ponding, poor tilth, a root-restrictive layer, water erosion, and wetness. Table 6 lists the limitations and hazards affecting pastures on the soils in the county that are in capability classes 1 through 6.

An *equipment limitation* occurs where the slope is more than 18 percent. This limitation can cause rapid wear of equipment. Also, it can hinder fertilization, harvest, pasture renovation, and seedbed preparation. The use of equipment is limited by the slope of the moderately steep and steep Miami, Hennepin, and Strawn soils.

Excess lime is a limitation where the calcium carbonate equivalent is 15 percent or more within 16 inches of the surface. The high content of carbonates affects the availability of many plant nutrients and influences the effectiveness of herbicides. Excess lime is a management concern in areas of Harpster soils.

Frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Pasture plants may respond well to additions of phosphate fertilizer. Applications of herbicide should be adjusted as the level of alkalinity increases.

Flooding is a hazard where the soil is occasionally or frequently flooded. Flooding occurs in unprotected areas along the major rivers and their tributaries. Surface drainage ditches can help to remove floodwater where suitable outlets are available. Flooding may damage pasture plants in some years. Aetna, Huntsville, Lawson, Radford, Ross, and Sawmill soils are subject to flooding.

Figure 11.—Pasture in an area of sloping Strawn and La Rose soils. Proper grazing management improves the vigor and reproduction of desirable plants.

Dikes and diversions minimize the extent of the damage caused by floodwater. Selecting forage and hay varieties adapted to shorter growing seasons and wetter conditions reduces the extent of flood damage. Restricted use during wet periods helps to keep the pasture in good condition. Management of drainage in conformance with regulations may require special permits and extra planning.

Frost heave is a limitation where the potential for frost action is moderate or high and the soil is poorly drained or very poorly drained. Frost heave occurs in soils when ice lenses or bands develop into or push an ice wedge between two layers of soil near the surface layer. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils with a low content of sand have small pores that hold water and enable ice lenses to form. Ashkum, Drummer, and Selma are among the soils that are susceptible to frost heave.

Selecting adapted forage and hay varieties reduces the effects of frost heave. Timely rotation of grazing maintains a surface cover that insulates the soil and thus minimizes frost heave. Leaving stubble, 4 to 6 inches high, on a pasture in winter and planting grass-legume mixtures also minimize frost heave.

Limited available water capacity is a limitation where the slope is 25 percent or less and the amount of plant-available water to a depth of 60 inches or to a limiting layer above 60 inches is less than 6 inches. Available water capacity is the volume of water that is be available to plants when the soil is at field capacity. Fox, Lorenzo, and Warsaw are examples of soils with a limited available water capacity.

Increasing the content of organic matter in the surface layer and selecting plant species that are tolerant of drought can improve the pasture in areas of soils with a limited available water capacity.

Low pH is a limitation where the pH is 5.5 or less within a depth of 40 inches. This limitation can cause toxicity or decrease the availability of plant nutrients, either of which affects the health and vigor of the plants. Many soils in McLean County have low pH. Camden, Keomah, and Osco soils are examples.

Selecting adapted forage and hay varieties and applying lime according to the results of soil tests help to overcome this limitation. Planting species that are more tolerant of acidic conditions, such as red clover and alsike clover, can increase the quantity and improve the quality of livestock forage.

Ponding is a limitation in areas where the seasonal high water table is above the surface. Ponding decreases aeration and increases nutrient losses. Ashkum, Drummer, Peotone, and Sawmill soils are subject to ponding.

Land grading helps to control ponding. Surface ditches and surface inlet tile also can help to remove the excess water if suitable outlets are available. Management of drainage in conformance with wetland regulations may require special permits and extra planning. Selecting forage and hay varieties adapted to wet conditions improves forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Poor tilth is a limitation in areas where the surface layer has 27 to 35 percent clay and less than 4 percent organic matter or where it has a clay content of 35 percent or more. Poor tilth can occur in soils when part of the subsoil is incorporated into the plow layer because of erosion. Incorporation of subsoil material decreases the amount of organic matter and increases the content of clay in the surface soil. Heavy rainfall often causes surface crusting. Poor tilth also occurs in poorly drained soils with a high content of clay, regardless of the content of organic matter, and in soils that have been excessively tilled.

Poor tilth decreases the rate of water infiltration and increases the runoff rate and the susceptibility to erosion on the more sloping soils. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. They can be tilled only within a narrow range of moisture content. As a result, seedbed preparation is difficult.

When pastures are established or renovated, minimizing tillage and applying conservation tillage operations during periods when soil moisture conditions are optimal or nearly optimal can improve tilth.

A *root-restrictive layer* is a limitation where dense material, a natric horizon, bedrock, or a fragipan is within 40 inches of the surface. A root-restrictive layer can increase the susceptibility of the soil to erosion and limit the effectiveness of drainage systems. Root-restrictive layers affect plant growth by limiting the amount of plant nutrients and available water. Dana, Miami, Swygert, and Varna are examples of soils that have dense material within 40 inches of the surface. A combination of conservation measures, including special tillage practices, incorporation of organic matter into the soil, and selection of adapted forage and hay varieties, can help to overcome this limitation.

Water erosion is a hazard where the Kw factor multiplied by the slope is more than 1.0 and the slope is 3 percent or more. Erosion can occur in overgrazed areas or during pasture establishment and renovation when the surface soil is not protected against the impact of raindrops. The impact of raindrops causes

poor tilth, which reduces the rate of water infiltration and increases the runoff rate. Water erosion reduces the productivity of the soil. Also, the eroding sediments, livestock manure, and added nutrients enter streams, rivers, water impoundments, and road ditches. Camden, Catlin, Dana, Miami, and Wyanet are examples of soils that are subject to water erosion. Soils on long or steep slopes are also more susceptible to water erosion than soils on short or gentle slopes.

Rotation grazing, which prevents overgrazing and thus prevents surface compaction and excessive runoff, helps to control erosion. Tilling on the contour, using a no-till system of seeding when a seedbed is prepared or the pasture is renovated, and selecting adapted forage and hay varieties also help to control erosion.

Wetness is a limitation where the seasonal high water table is at a depth of 1.5 feet or less. It is a management concern on much of the acreage used for pasture in McLean County. The poorly drained Ashkum, Drummer, Edgington, El Paso, Harpster, Hartsburg, Peotone, Sable, and Sawmill soils are examples of soils that are limited by wetness.

Most of the soils needing drainage are already drained by tile, but many drainage systems are old and should be replaced for maximum efficiency. Subsurface drains can help to lower the seasonal high water table if suitable outlets are available. In soils with a high content of clay and restricted permeability, subsurface drainage may not be practical. In these soils surface ditches may help to reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents (Fehrenbacher et al., 1978). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). Only capability class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section “Soil Series and Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

Potentially, 704,736 acres in the survey area, or approximately 93 percent of the total acreage, meets the soil requirements for prime farmland. Some of this acreage is prime farmland only where certain conditions are met. Areas of this land are throughout the county.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding or wetness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section “Soil Series and Detailed Soil Map Units.”

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin et al., 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt et al., 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present (National Research Council, 1995; Hurt et al., 1998).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 indicates the hydric and nonhydric soils identified in the names of the detailed map units in the county. The table also identifies the included soils that are considered hydric. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

Windbreaks and Environmental Plantings

Windbreaks are needed in some areas in McLean County where the soils are subject to wind erosion. Wind erosion is a moderate hazard on some soils in the county where the surface is not protected. These soils have a surface layer of very fine sandy loam or sandy loam or have a high content of finely divided calcium carbonate or a high content of clay in the surface layer. Harpster soils have a high content of calcium carbonate in the surface layer. Ashkum and Peotone soils have a high content of clay in the surface layer.

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 10 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and

screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Woodland

In the early 1800s, forests covered about 10.9 percent of the land in McLean County (Iverson et al., 1989). Since then, most of the trees have been cleared from the areas best suited to cultivation. By 1997, only 7,803 acres, or about 1 percent of the total acreage of the county, remained as woodland (fig. 12; USDA, 1997). Most of the woodland is privately owned. The most common trees in the uplands are white oak, black oak, northern red oak, shagbark hickory, white ash, green ash, sugar maple, silver maple, boxelder, black walnut, black cherry, and American elm. The most common trees on flood plains are cottonwood, sycamore, willow, bur oak, pin oak, swamp white oak, hackberry, and silver maple.

The remaining woodland is dominantly in areas that are too steep, too wet, or too isolated for cultivation. Most of these areas are along the drainageways of the Mackinaw and Sangamon Rivers and Kickapoo and Sugar Creeks. If properly managed, the soils in these forested areas are generally well suited to high-quality trees (fig. 13).

The productivity of many of the remaining forest stands could be improved by proper management. Exclusion of livestock, protection from fire, insects, and diseases, proper logging methods, and proven silvicultural methods that enhance growth and regeneration are needed in these areas.

Forest Productivity

Table 11 can help woodland owners or managers plan the use of soils for wood crops. In this table, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a

Figure 12.—Understory trees and shrubs in a wooded area of Mayville silt loam, 2 to 5 percent slopes, eroded, at Moraine View State Park.

Figure 13.—A wooded area of Miami and Hennepin soils, 18 to 35 percent slopes.

volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual" (USDA, 1998), which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreation

The demand for recreational facilities is increasing throughout McLean County. Lake Bloomington, Evergreen Lake, and Moraine View State Park are among the larger recreational areas available for public use. Playgrounds, athletic fields, golf courses, fishing ponds, camping and picnic areas, hunting areas, and facilities for target shooting are throughout the county.

The soils of the survey area are rated in tables 12a and 12b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate

maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 12a and 12b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The

ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Originally, much of McLean County was part of a broad, tall-grass prairie that had wet meadows, marshes, and areas of open water. This area is near the southern limit of the Midwestern prairie pothole region that traditionally provided valuable nesting and stop-over habitat for migratory waterfowl and provided habitat for other wetland wildlife and for openland wildlife. Although some areas were wooded, especially those along creeks and on moderately steep to very steep landforms, the native plant communities were dominated by tall prairie grasses.

As the county was settled, conversion of land to agricultural uses and urbanization altered the natural plant communities and the wildlife species associated with them. The landscape in McLean County is now a mosaic of urban development, cropland, pasture, isolated areas of forestland, wetlands, and waterways that support wildlife species that have adapted to the human-altered landscape. These species include whitetail deer, fox, coyotes, mourning doves, pheasants, squirrels, cardinals, and raccoons.

The largest areas that are managed for wildlife are Moraine View State Park, near LeRoy, and COMLARA County Park, around Evergreen Lake. Other areas are near Lake Bloomington, the Parkland's Foundation Preserve along the Mackinaw River, Funks Grove Preserve, and Saybrook Habitat Area.

Many areas used as wildlife habitat are not necessarily set aside for this purpose. Wildlife habitat is commonly a secondary use in areas used primarily for other purposes, such as farming. For example, the large areas of nearly level and gently sloping soils used for cultivated crops and pasture are also generally well suited to use as habitat for openland wildlife.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 13, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are lovegrass, orchardgrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the

surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, ragweed, wildrye, and Illinois bundleflower.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, hickory, sycamore, cottonwood, elm, sassafras, serviceberry, gray dogwood, flowering dogwood, hazelnut, sumac, and raspberry. Soils rated *good* are best suited to native plants, such as hazelnut, gray or silky dogwood, oak, and hickory. Table 11 shows some of the trees recommended for planting on the soils in the county.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are white pine, Norway spruce, balsam fir, redcedar, and juniper. Table 10 shows some of the trees recommended for planting on the soils in the county.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for openland wildlife can be improved by seeding roadsides, fence rows, and wildlife travel lanes (fig. 14) to perennial plants and legumes, such as smooth bromegrass, timothy, redtop, bluegrass, alfalfa, red clover, ladino clover, or alsike clover. Grassy areas can be enhanced with perennial native prairie grasses, such as big bluestem, little bluestem, switchgrass, and indiangrass. Nesting cover should be protected from fire, traffic, grazing, mowing, or other disturbance until after the nesting season.

Warm-season grasses grow best under periodic prescribed burning. Any existing woody cover should be protected from fire and grazing. The trees and shrubs established in hedgerows and windbreaks should be those that provide food and roosting areas. Brush piles can provide cover along fence rows and in odd-shaped areas that are inconvenient for cultivation. Leaving crop residue on the surface after harvest, leaving waste grain in the fields, and leaving unharvested areas next to wildlife cover help to provide cover and food throughout the winter.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for woodland wildlife can be improved by protecting native trees, shrubs, and prairie plants from grazing livestock and uncontrolled fire, which can destroy the leaf mulch and the desirable young trees, shrubs, and sprouts that provide food and cover. Hedgerows, farm windbreaks, brush piles, food plots, and strips of grass or grass-legume mixtures provide additional food and cover. Establishing and maintaining plantings for food and cover may be difficult in the more sloping areas because of the slope and the hazard of erosion. Establishing food plots of grain or seed crops in the less sloping areas and on the contour reduces the hazard of erosion. Dead trees can provide den sites for raccoons, woodpeckers, opossum, and other cavity-dwelling species.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, frogs, snakes, and turtles.

Habitat for wetland wildlife can be improved by delaying or limiting the cultivation and planting of commodity crops in shallow depressions that are subject to ponding; by protecting areas of smartweeds, bulrushes, burreeds, and barnyard grasses; and by planting Japanese millet, milo, and short corn varieties. Blocking natural channels and artificial drainage systems can create shallow ponds and marshes. If pits dug in poorly drained or very poorly drained soils are at least 30 feet in diameter and 2 to 3 feet deep, they provide open water through

Figure 14.— An area of gently sloping Russell soils, nearly level Lawson soils, and steep Strawn, Miami, and Hennepin soils along Rock Creek. Fence rows provide cover and travel lanes for wildlife.

the spring and early summer and thus encourage nesting by ducks. These areas should be protected from grazing.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of

the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 14a and 14b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base

of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 15a and 15b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites

for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in table 15b are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in table 15b also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 16a and 16b give information about the soils as potential sources of reclamation material, roadfill, topsoil, gravel, and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the table 16a. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In table 16a, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its content of organic matter. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 16b, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Water Management

Tables 17a and 17b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas (fig. 15); embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface

Figure 15.—A pond in an area of Strawn loam, 5 to 10 percent slopes, eroded, east of Lake Bloomington.

drains; terraces and diversions; and drainage. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In table 17a, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a

depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways and surface drains. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine moisture density, percentage passing sieves, liquid limit, plasticity index, and AASHTO and Unified engineering classifications. These results are reported in table 23.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 18 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. The AASHTO classification for soils tested is given in table 23.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the tables.

Physical Properties

Tables 19a and 19b show estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller. In table 19a, the estimated sand, silt and clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In table 19a, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in table 19a indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in table 19a as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and

swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Erosion factors are shown in table 19a as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (USDA, NRCS, NSSH).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 19b, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Chemical Properties

Table 20 shows estimates of chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or

well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, only percolation, transpiration, or evaporation removes the water. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 22 gives estimates of selected soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture,

density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Engineering Index Test Data

Table 23 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section “Soil Series and Detailed Soil Map Units.” The Illinois Department of Transportation, Springfield, Illinois, tested the soil samples.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487-00 (ASTM); Mechanical analysis—T 88 (AASHTO), D 422 (ASTM), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 4318 (ASTM); Plasticity index—T 90 (AASHTO), D 4318 (ASTM); and Moisture density—T 99 (AASHTO), D 698 (ASTM).

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.
Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.
AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.
Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.
Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.
Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.
Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.
Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.
Aspect. The direction in which a slope faces.
Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.
Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.
Basal till. Compact glacial till deposited beneath the ice.
Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly

rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth

is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.7 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. An association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production typifies it.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human

or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial lake (relict). An area formerly occupied by a glacial lake. (See Glaciolacustrine deposits.)

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by

streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground moraine. An extensive, fairly even layer of till having an uneven or undulating surface.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected

by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landscape. A collection of related natural landforms; usually the land surface which the eye can comprehend in a single view.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few* (less than 2 percent); *common* (2 to 20 percent); and *many* (more than 20 percent); size—*fine* to *extremely coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 2 millimeters (about 0.08 inch); *medium,* 2 to 5 millimeters (about 0.08 to 0.2 inch); *coarse,* 5 to 20 millimeters (about 0.2 to 0.8 inch); *very coarse,* 20 to 76 millimeters (about 0.8 inch to 3.0 inches); and *extremely coarse (*more than 76 millimeters).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. A soil that is 85 percent or more sand and not more than 10 percent clay is considered to be in the sand texture class.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil that is 80 percent or more silt and less than 12 percent clay is considered to be in the silt textural class.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Strongly sloping	5 to 10 percent
Moderately steep	10 to 18 percent
Steep	18 to 35 percent
Very steep	35 percent and higher

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream, and representing the dissected remnants of an abandoned flood plain, streambed, or valley floor produced during a former period of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Chenoa, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	31.4	15.0	23.2	58	-17	0	1.52	0.66	2.28	3	7.2
February----	37.2	20.1	28.6	65	-12	1	1.43	.68	2.08	3	5.2
March-------	49.5	30.1	39.8	80	6	34	3.02	1.62	4.25	6	2.5
April-------	62.9	39.7	51.3	86	18	136	3.31	1.66	4.75	6	1.0
May---------	74.3	50.5	62.4	92	31	386	3.88	1.91	5.59	7	.0
June--------	83.3	60.0	71.7	97	43	647	4.13	1.91	6.04	6	.0
July--------	85.6	63.5	74.6	98	48	762	3.33	1.60	4.82	5	.0
August------	83.7	61.3	72.5	96	45	696	3.22	1.43	4.76	5	.0
September---	77.8	53.6	65.7	94	32	472	2.91	1.21	4.35	5	.0
October-----	65.5	42.6	54.1	86	22	184	2.66	1.38	3.78	5	.1
November----	49.5	31.9	40.7	74	9	34	2.70	1.28	3.94	5	1.6
December----	36.1	20.9	28.5	63	-10	5	2.41	1.04	3.58	4	5.4
Yearly:											
Average---	61.4	40.8	51.1	---	---	---	---	---	---	---	---
Extreme---	103	-26	---	99	-19	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,357	34.52	28.69	39.84	60	23.0

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Chenoa, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than-----	April 15	April 21	May 7
2 years in 10 later than-----	April 11	April 17	May 2
5 years in 10 later than-----	April 1	April 9	April 22
First freezing temperature in fall:			
1 year in 10 earlier than---	Oct. 13	Sept. 30	Sept. 24
2 years in 10 earlier than---	Oct. 19	Oct. 7	Sept. 29
5 years in 10 earlier than---	Oct. 31	Oct. 20	Oct. 8

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Chenoa, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	187	171	149
8 years in 10	196	178	156
5 years in 10	212	193	169
2 years in 10	228	207	183
1 year in 10	247	215	190

Table 4.--Classification of the Soils

(A single asterisk before the soil name indicates that all map units are taxadjuncts to the series. Double asterisks indicate that only some of the map units are taxadjuncts. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Aetna	Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Andres	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Arrowsmith	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Ashkum	Fine, mixed, superactive, mesic Typic Endoaquolls
Atterberry	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Birkbeck	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Brenton	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
**Catlin	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
**Chenoa	Fine, illitic, mesic Aquic Argiudolls
Clare	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Dana	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Edgington	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
*Elkhart	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Elliott	Fine, illitic, mesic Aquic Argiudolls
Elpaso	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Fincastle	Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs
Flanagan	Fine, smectitic, mesic Aquic Argiudolls
Fox	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
*Graymont	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Hartsburg	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Hennepin	Fine-loamy, mixed, active, mesic Typic Eutrudepts
Huntsville	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Ipava	Fine, smectitic, mesic Aquic Argiudolls
Kane	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls
Kaneville	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
La Rose	Fine-loamy, mixed, active, mesic Typic Argiudolls
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lisbon	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
*Lorenzo	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls
Martinsville	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Mayville	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Miami	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Muscatune	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Normal	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Orthents, loamy	Fine-loamy, mixed, active, nonacid, mesic Aquic Udorthents
**Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Penfield	Fine-loamy, mixed, active, mesic Typic Argiudolls
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
**Plano	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Raub	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
*Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Russell	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
*Sabina	Fine, smectitic, mesic Aeric Epiaqualfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
**Saybrook	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Selma	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Strawn	Fine-loamy, mixed, active, mesic Typic Hapludalfs
*Swygert	Fine, mixed, active, mesic Aquic Argiudolls

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Symerton	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
**Varna	Fine, illitic, mesic Oxyaquic Argiudolls
**Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
**Wyanet	Fine-loamy, mixed, active, mesic Typic Argiudolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
17A	Keomah silt loam, 0 to 2 percent slopes	1,939	0.3
27B2	Miami silt loam, 2 to 5 percent slopes, eroded	2,203	0.3
27C2	Miami silt loam, 5 to 10 percent slopes, eroded	1,186	0.2
27D2	Miami silt loam, 10 to 18 percent slopes, eroded	1,839	0.2
43A	Ipava silt loam, 0 to 2 percent slopes	80,822	10.6
51A	Muscatune silt loam, 0 to 2 percent slopes	6,139	0.8
56B2	Dana silt loam, 2 to 5 percent slopes, eroded	3,221	0.4
56C2	Dana silty clay loam, 5 to 10 percent slopes, eroded	2,439	0.3
59A	Lisbon silt loam, 0 to 2 percent slopes	12,935	1.7
60B2	La Rose silt loam, 2 to 5 percent slopes, eroded	3,185	0.4
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded	4,881	0.6
60D2	La Rose silt loam, 10 to 18 percent slopes, eroded	422	*
61A	Atterberry silt loam, 0 to 2 percent slopes	987	0.1
67A	Harpster silty clay loam, 0 to 2 percent slopes	5,063	0.7
68A	Sable silty clay loam, 0 to 2 percent slopes	106,581	14.0
86A	Osco silt loam, 0 to 2 percent slopes	4,233	0.6
86B	Osco silt loam, 2 to 5 percent slopes	24,960	3.3
86B2	Osco silt loam, 2 to 5 percent slopes, eroded	17,450	2.3
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded	148	*
125A	Selma loam, 0 to 2 percent slopes	1,953	0.3
134B2	Camden silt loam, 2 to 5 percent slopes, eroded	1,047	0.1
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	554	*
145B	Saybrook silt loam, 2 to 5 percent slopes	15	*
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded	42,489	5.6
145C2	Saybrook silt loam, 5 to 10 percent slopes, eroded	4,808	0.6
146A	Elliott silt loam, 0 to 2 percent slopes	70	*
148B2	Proctor silt loam, 2 to 5 percent slopes, eroded	4,850	0.6
148C2	Proctor silt loam, 5 to 10 percent slopes, eroded	639	*
149A	Brenton silt loam, 0 to 2 percent slopes	3,562	0.5
152A	Drummer silty clay loam, 0 to 2 percent slopes	9,375	1.2
154A	Flanagan silt loam, 0 to 2 percent slopes	20,217	2.7
171B	Catlin silt loam, 2 to 5 percent slopes	16,336	2.2
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded	49,607	6.5
171C2	Catlin silt loam, 5 to 10 percent slopes, eroded	3,253	0.4
193B2	Mayville silt loam, 2 to 5 percent slopes, eroded	6,142	0.8
193C2	Mayville silt loam, 5 to 10 percent slopes, eroded	4,002	0.5
198A	Elburn silt loam, 0 to 2 percent slopes	5,535	0.7
199A	Plano silt loam, 0 to 2 percent slopes	2,425	0.3
199B	Plano silt loam, 2 to 5 percent slopes	5,067	0.7
199B2	Plano silt loam, 2 to 5 percent slopes, eroded	27	*
213A	Normal silt loam, 0 to 2 percent slopes	2,867	0.4
223B2	Varna silt loam, 2 to 4 percent slopes, eroded	14,924	2.0
223C2	Varna silty clay loam, 4 to 6 percent slopes, eroded	864	0.1
224C2	Strawn loam, 5 to 10 percent slopes, eroded	4,778	0.6
224G	Strawn loam, 35 to 60 percent slopes	1,244	0.2
232A	Ashkum silty clay loam, 0 to 2 percent slopes	25,199	3.3
233B	Birkbeck silt loam, 2 to 5 percent slopes	3,339	0.4
233B2	Birkbeck silt loam, 2 to 5 percent slopes, eroded	6,091	0.8
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded	1,282	0.2
236A	Sabina silt loam, 0 to 2 percent slopes	1,704	0.2
244A	Hartsburg silty clay loam, 0 to 2 percent slopes	2,589	0.3
272A	Edgington silt loam, 0 to 2 percent slopes	1,533	0.2
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded	3,210	0.4
290A	Warsaw loam, 0 to 2 percent slopes	305	*
290B2	Warsaw loam, 2 to 5 percent slopes, eroded	1,385	0.2
293A	Andres silt loam, 0 to 2 percent slopes	1,132	0.1
294B	Symerton silt loam, 2 to 5 percent slopes	1,171	0.2
318B2	Lorenzo silt loam, 2 to 5 percent slopes, eroded	277	*
322B2	Russell silt loam, 2 to 5 percent slopes, eroded	1,748	0.2
322C2	Russell silt loam, 5 to 10 percent slopes, eroded	1,749	0.2
327B2	Fox silt loam, 2 to 5 percent slopes, eroded	416	*
327C2	Fox silt loam, 5 to 10 percent slopes, eroded	569	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
330A	Peotone silty clay loam, 0 to 2 percent slopes	6,130	0.8
343A	Kane silt loam, 0 to 2 percent slopes	335	*
481A	Raub silt loam, 0 to 2 percent slopes	8,988	1.2
496A	Fincastle silt loam, 0 to 2 percent slopes	478	*
533	Urban land	2,604	0.3
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded	7,396	1.0
567A	Elkhart silt loam, 0 to 2 percent slopes	543	*
567B	Elkhart silt loam, 2 to 5 percent slopes	1,603	0.2
567B2	Elkhart silt loam, 2 to 5 percent slopes, eroded	4,441	0.6
570D2	Martinsville silt loam, 10 to 18 percent slopes, eroded	245	*
614B	Chenoa silty clay loam, 2 to 5 percent slopes	32,308	4.3
614B2	Chenoa silty clay loam, 2 to 5 percent slopes, eroded	57	*
622B2	Wyanet silt loam, 2 to 5 percent slopes, eroded	18,665	2.5
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded	5,847	0.8
663A	Clare silt loam, 0 to 2 percent slopes	1,159	0.2
667A	Kaneville silt loam, 0 to 2 percent slopes	312	*
667B	Kaneville silt loam, 2 to 5 percent slopes	359	*
687B2	Penfield loam, 2 to 5 percent slopes, eroded	537	*
687C2	Penfield loam, 5 to 10 percent slopes, eroded	158	*
715A	Arrowsmith silt loam, 0 to 2 percent slopes	3,442	0.5
721A	Drummer and Elpaso silty clay loams, 0 to 2 percent slopes	68,789	9.1
802B	Orthents, loamy, undulating	2,292	0.3
865	Pits, gravel	833	0.1
893B	Catlin-Saybrook silt loams, 2 to 5 percent slopes	5,043	0.7
902A	Ipava-Sable complex, 0 to 2 percent slopes	2,355	0.3
964D	Miami and Hennepin soils, 10 to 18 percent slopes	2,740	0.4
964F	Miami and Hennepin soils, 18 to 35 percent slopes	2,667	0.4
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	490	*
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded	695	*
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded	8,714	1.1
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	155	*
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	16,612	2.2
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	8,418	1.1
8720A	Aetna silt loam, 0 to 2 percent slopes, occasionally flooded	516	*
MW	Miscellaneous water	76	*
W	Water	2,716	0.4
	Total	759,700	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture

(See text for a description of the limitations and hazards listed in this table. Miscellaneous map units are excluded from the table. Dashes indicate that the soil is generally unsuited to crops or pasture.)

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
17A:		
Keomah	Wetness, crusting, restricted permeability	Wetness, low pH
27B2:		
Miami	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
27C2:		
Miami	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
27D2:		
Miami	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
43A:		
Ipava	Wetness	Wetness
51A:		
Muscatune	Wetness	Wetness
56B2:		
Dana	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
56C2:		
Dana	Root-restrictive layer, poor tilth, crusting, water erosion	Root-restrictive layer, poor tilth, water erosion
59A:		
Lisbon	Wetness, root-restrictive layer	Wetness, root-restrictive layer
60B2:		
La Rose	Root-restrictive layer, excess lime, crusting, water erosion	Root-restrictive layer, water erosion, excess lime
60C2:		
La Rose	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
60D2:		
La Rose	Root-restrictive layer, excess lime, crusting, water erosion	Root-restrictive layer, water erosion, excess lime
61A:		
Atterberry	Wetness, crusting	Wetness, low pH
67A:		
Harpster	Ponding, poor tilth, excess lime	Ponding, excess lime, frost heave
68A:		
Sable	Ponding	Ponding, frost heave

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
86A:		
Osco	None*	Low pH
86B:		
Osco	Water erosion	Low pH
86B2:		
Osco	Crusting, water erosion	Low pH, water erosion
91B2:		
Swygert	Wetness, root-restrictive layer, poor tilth, crusting, restricted permeability	Wetness, root-restrictive layer, poor tilth,
125A:		
Selma	Ponding	Ponding, frost heave
134B2:		
Camden	Crusting, water erosion	Low pH
134C2:		
Camden	Crusting, water erosion	Low pH, water erosion
145B:		
Saybrook	Root-restrictive layer, water erosion	Root-restrictive layer
145B2:		
Saybrook	Root-restrictive layer, water erosion	Root-restrictive layer, low pH, water erosion
145C2:		
Saybrook	Root-restrictive layer, water erosion	Root-restrictive layer, low pH, water erosion
146A:		
Elliott	Wetness, root-restrictive layer, excess lime, restricted permeability	Wetness, root-restrictive layer, excess lime
148B2:		
Proctor	Water erosion	None**
148C2:		
Proctor	Water erosion	Water erosion
149A:		
Brenton	Wetness	Wetness
152A:		
Drummer	Ponding	Ponding, frost heave
154A:		
Flanagan	Wetness	Wetness
171B:		
Catlin	Water erosion	None**
171B2:		
Catlin	Wetness, water erosion	Wetness

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
171C2:		
Catlin	Water erosion	Water erosion
193B2:		
Mayville	Root-restrictive layer, crusting, water erosion	Low pH, water erosion
193C2:		
Mayville	Root-restrictive layer, crusting, water erosion	Low pH, water erosion
198A:		
Elburn	Wetness	Wetness
199A:		
Plano	None*	Low pH
199B:		
Plano	Water erosion	Low pH
199B2:		
Plano	Crusting, water erosion	None**
213A:		
Normal	Wetness	Wetness, low pH
223B2:		
Varna	Root-restrictive layer crusting, water erosion, restricted permeability	Root-restrictive layer
223C2:		
Varna	Root-restrictive layer, poor tilth, water erosion, restricted permeability	Root-restrictive layer, poor tilth, water erosion
224C2:		
Strawn	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
224G:		
Strawn	---	---
232A:		
Ashkum	Ponding, poor tilth	Ponding, frost heave
233B:		
Birkbeck	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
233B2:		
Birkbeck	Root-restrictive layer, crusting, water erosion	Root-restrictive layer
233C2:		
Birkbeck	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
236A:		
Sabina	Wetness, crusting	Wetness, low pH

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
244A:		
Hartsburg	Ponding	Ponding, frost heave
272A:		
Edgington	Ponding	Ponding, low pH, frost heave
279B2:		
Rozetta	Crusting, water erosion	Water erosion
290A:		
Warsaw	Excessive permeability	None**
290B2:		
Warsaw	Crusting, water erosion, limited available water capacity, excessive permeability	Limited available water capacity
293A:		
Andres	Wetness	Wetness
294B:		
Symerton	Water erosion	None**
318B2:		
Lorenzo	Water erosion, limited available water capacity, excessive permeability	Limited available water capacity
322B2:		
Russell	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, low pH, water erosion
322C2:		
Russell	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, low pH, water erosion
327B2:		
Fox	Custing, limited available water capacity, excessive permeability	Lmited available water capacity
327C2:		
Fox	Crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity
330A:		
Peotone	Ponding, poor tilth	Ponding, frost heave
343A:		
Kane	Wetness, excessive permeability	Wetness
481A:		
Raub	Wetness, root-restrictive layer	Wetness, root-restrictive layer

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
496A:		
Fincastle	Wetness, root-restrictive layer, crusting	Wetness, root-restrictive layer, low pH
541B2:		
Graymont	Wetness, root-restrictive layer, water erosion, restricted permeability	Wetness, root-restrictive layer
567A:		
Elkhart	None*	None**
567B:		
Elkhart	Water erosion	None**
567B2:		
Elkhart	None*	None**
570D2:		
Martinsville	Crusting, water erosion	Water erosion
614B:		
Chenoa	Wetness, poor tilth, water erosion	Wetness
614B2:		
Chenoa	Wetness, poor tilth, water erosion	Wetness
622B2:		
Wyanet	Root-restrictive layer, water erosion	Root-restrictive layer
622C2:		
Wyanet	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
663A:		
Clare	None*	None**
667A:		
Kaneville	Crusting	None**
667B:		
Kaneville	Crusting, water erosion	Water erosion
687B2:		
Penfield	Crusting, water erosion	None**
687C2:		
Penfield	Crusting, water erosion, excessive permeability	Water erosion
715A:		
Arrowsmith	Wetness	Wetness
721A:		
Drummer	Ponding	Ponding, frost heave
Elpaso	Ponding	Ponding, frost heave

See footnotes at end of table.

Table 6.--Limitations and Hazards Affecting Cropland and Pasture--Continued

Soil name and map symbol	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
802B:		
Orthents, loamy	Poor tilth, excess lime, crusting, water erosion, restricted permeability	Poor tilth, water erosion, excess lime
893B:		
Catlin	Water erosion	None**
Saybrook	Root-restrictive layer, water erosion	Root-restrictive layer
902A:		
Ipava	Wetness	Wetness
Sable	Ponding	Ponding, frost heave
964D:		
Miami	Root-restrictive layer, crusting, water erosion	Root-restrictive layer, water erosion
Hennepin	Root-restrictive layer, poor tilth, excess lime, crusting, water erosion	Root-restrictive layer, poor tilth, water erosion, excess lime
964F:		
Miami	---	Equipment limitation, root-restrictive layer, water erosion
Hennepin	---	Equipment limitation, root-restrictive layer, water erosion, excess lime
3107A:		
Sawmill	Flooding, ponding	Flooding, ponding, frost heave
8073A:		
Ross	Flooding	Flooding
8074A:		
Radford	Flooding, wetness	Flooding, wetness
8077A:		
Huntsville	Flooding	Flooding
8107A:		
Sawmill	Flooding, ponding, poor tilth	Flooding, ponding, poor tilth, frost heave
8451A:		
Lawson	Flooding, wetness	Flooding, wetness
8720A:		
Aetna	Flooding, wetness, crusting	Flooding, wetness

* This soil is well suited to crops.
** This soil is well suited to pasture.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Corn	Soybeans	Oats	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	*Bu*	*Bu*	*Bu*	*Tons*	*AUM*
17A:							
Keomah	2w	129.00	39.00	72.00	52.00	5.10	8.50
27B2:							
Miami	2e	116.00	38.00	65.00	49.00	4.60	7.70
27C2:							
Miami	3e	114.00	38.00	64.00	48.00	4.50	7.50
27D2:							
Miami	4e	108.00	36.00	61.00	45.00	4.30	7.10
43A:							
Ipava	1	163.00	52.00	91.00	66.00	6.10	10.20
51A:							
Muscatune	1	167.00	51.00	95.00	64.00	6.20	10.30
56B2:							
Dana	2e	137.00	43.00	82.00	58.00	5.30	8.80
56C2:							
Dana	3e	134.00	42.00	80.00	56.00	5.20	8.60
59A:							
Lisbon	1	155.00	51.00	92.00	63.00	5.90	9.80
60B2:							
La Rose	2e	118.00	39.00	71.00	50.00	4.60	7.70
60C2:							
La Rose	3e	116.00	39.00	70.00	49.00	4.50	7.50
60D2:							
La Rose	4e	109.00	36.00	66.00	46.00	4.30	7.10
61A:							
Atterberry	1	149.00	44.00	85.00	60.00	5.60	9.30
67A:							
Harpster	2w	136.00	44.00	74.00	52.00	5.00	8.30
68A:							
Sable	2w	156.00	51.00	85.00	61.00	5.60	9.33
86A:							
Osco	1	155.00	46.00	89.00	62.00	5.90	9.80
86B:							
Osco	2e	153.00	46.00	88.00	61.00	5.80	9.70
86B2:							
Osco	2e	149.00	44.00	85.00	60.00	5.70	9.40
91B2:							
Swygert	2e	107.00	37.00	69.00	48.00	4.20	7.10

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Oats	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	*Bu*	*Bu*	*Bu*	*Tons*	*AUM*
125A:							
Selma	2w	136.00	44.00	76.00	53.00	5.00	8.30
134B2:							
Camden	2e	120.00	37.00	69.00	53.00	4.80	8.00
134C2:							
Camden	3e	118.00	37.00	68.00	52.00	4.70	7.80
145B:							
Saybrook	2e	138.00	46.00	83.00	59.00	5.50	9.20
145B2:							
Saybrook	2e	133.00	44.00	81.00	58.00	5.40	9.00
145C2:							
Saybrook	3e	131.00	43.00	79.00	56.00	5.30	8.80
146A:							
Elliott	2w	128.00	45.00	79.00	55.00	5.10	8.50
148B2:							
Proctor	2e	138.00	42.00	84.00	57.00	5.30	8.80
148C2:							
Proctor	3e	135.00	41.00	83.00	55.00	5.20	8.60
149A:							
Brenton	1	160.00	47.00	91.00	62.00	5.90	9.80
152A:							
Drummer	2w	154.00	51.00	83.00	61.00	5.50	9.20
154A:							
Flanagan	1	162.00	52.00	92.00	67.00	6.10	10.20
171B:							
Catlin	2e	149.00	46.00	86.00	60.00	5.70	9.60
171B2:							
Catlin	2e	144.00	44.00	84.00	59.00	5.60	9.30
171C2:							
Catlin	3e	141.00	43.00	82.00	57.00	5.50	9.10
193B2:							
Mayville	2e	104.00	35.00	62.00	52.00	4.40	7.40
193C2:							
Mayville	3e	102.00	34.00	61.00	51.00	4.30	7.20
198A:							
Elburn	1	161.00	50.00	94.00	63.00	6.10	10.20
199A:							
Plano	1	151.00	45.00	90.00	60.00	5.80	9.70
199B:							
Plano	2e	149.00	45.00	89.00	59.00	5.70	9.50
199B2:							
Plano	2e	145.00	43.00	86.00	58.00	5.60	9.30

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Oats	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	*Bu*	*Bu*	*Bu*	*Tons*	*AUM*
213A:							
Normal	1	142.00	43.00	80.00	58.00	5.40	9.00
223B2:							
Varna	2e	118.00	39.00	72.00	51.00	4.60	7.70
223C2:							
Varna	3e	116.00	39.00	71.00	50.00	4.50	7.50
224C2:							
Strawn	3e	102.00	30.00	55.00	40.00	3.80	6.30
224G:							
Strawn	7e	---	---	---	---	1.80	3.00
232A:							
Ashkum	2w	130.00	47.00	79.00	54.00	5.00	8.30
233B:							
Birkbeck	2e	122.00	41.00	69.00	54.00	5.00	8.30
233B2:							
Birkbeck	2e	118.00	39.00	67.00	53.00	4.80	8.00
233C2:							
Birkbeck	3e	116.00	39.00	66.00	52.00	4.70	7.80
236A:							
Sabina	1	133.00	42.00	75.00	56.00	5.20	8.70
244A:							
Hartsburg	2w	145.00	47.00	79.00	56.00	5.30	8.80
272A:							
Edgington	2w	122.00	42.00	68.00	51.00	4.50	7.50
279B2:							
Rozetta	2e	126.00	38.00	70.00	52.00	5.00	8.33
290A:							
Warsaw	2s	115.00	40.00	74.00	53.00	4.60	7.70
290B2:							
Warsaw	2e	110.00	38.00	71.00	51.00	4.40	7.40
293A:							
Andres	1	145.00	48.00	88.00	61.00	5.50	9.20
294B:							
Symerton	2e	135.00	44.00	82.00	58.00	5.30	8.90
318B2:							
Lorenzo	3s	86.00	28.00	57.00	41.00	3.40	5.60
322B2:							
Russell	2e	120.00	39.00	66.00	53.00	4.60	7.60
322C2:							
Russell	3e	109.00	36.00	60.00	48.00	4.20	7.00
327B2:							
Fox	2e	102.00	32.00	61.00	44.00	4.10	6.90

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Oats	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	*Bu*	*Bu*	*Bu*	*Tons*	*AUM*
327C2:							
Fox	3e	100.00	31.00	60.00	43.00	4.00	6.70
330A:							
Peotone	3w	123.00	42.00	58.00	43.00	4.20	7.00
343A:							
Kane	1	122.00	43.00	76.00	55.00	4.80	8.00
481A:							
Raub	1	155.00	51.00	92.00	63.00	6.10	10.20
496A:							
Fincastle	2w	131.00	41.00	73.00	55.00	5.00	8.30
533:							
Urban land.							
541B2:							
Graymont	2e	131.00	39.00	77.00	55.00	5.20	8.60
567A:							
Elkhart	1	132.00	39.00	73.00	53.00	5.10	8.50
567B:							
Elkhart	2e	131.00	39.00	72.00	52.00	5.00	8.40
567B2:							
Elkhart	2e	127.00	37.00	70.00	51.00	4.90	8.20
570D2:							
Martinsville	4e	85.00	26.00	46.00	36.00	3.40	5.60
614B:							
Chenoa	2e	131.00	44.00	80.00	55.00	5.20	8.70
614B2:							
Chenoa	2e	127.00	42.00	78.00	54.00	5.10	8.50
622B2:							
Wyanet	2e	124.00	42.00	75.00	55.00	5.10	8.50
622C2:							
Wyanet	3e	121.00	41.00	73.00	54.00	5.00	8.30
663A:							
Clare	1	144.00	44.00	88.00	59.00	5.50	9.20
667A:							
Kaneville	1	138.00	43.00	81.00	55.00	5.40	9.00
667B:							
Kaneville	2e	135.00	42.00	79.00	54.00	5.30	8.80
687B2:							
Penfield	2e	132.00	40.00	84.00	55.00	5.10	8.50
687C2:							
Penfield	3e	130.00	39.00	83.00	54.00	5.00	8.30
715A:							
Arrowsmith	1	154.00	47.00	87.00	62.00	5.60	9.30

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Oats	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	*Bu*	*Bu*	*Bu*	*Tons*	*AUM*
721A:							
Drummer and Elpaso--	2w	151.00	50.00	83.00	60.00	5.50	9.10
802B:							
Orthents, loamy-----	2e	---	---	---	---	---	---
865:							
Pits, gravel--------	8	---	---	---	---	---	---
893B:							
Catlin-Saybrook-----	2e	145.00	46.00	85.00	60.00	5.60	9.50
902A-----------------		161.00	52.00	90.00	65.00	6.00	10.00
Ipava---------------	1						
Sable---------------	2w						
964D:							
Miami and Hennepin--	4e	82.00	26.50	47.00	32.50	3.25	5.40
964F:							
Miami and Hennepin--	6e	---	---	---	---	2.60	4.40
3107A:							
Sawmill-------------	3w	132.00	42.00	68.00	---	5.00	8.30
8073A:							
Ross----------------	2w	141.00	45.00	78.00	58.00	5.30	8.90
8074A:							
Radford-------------	2w	139.00	45.00	81.00	59.00	5.40	9.10
8077A:							
Huntsville----------	2w	147.00	47.00	83.00	62.00	5.60	9.40
8107A:							
Sawmill-------------	2w	143.00	46.00	74.00	52.00	5.30	8.90
8451A:							
Lawson--------------	2w	156.00	47.00	83.00	60.00	5.50	9.20
8720A:							
Aetna---------------	2w	131.00	42.00	70.00	50.00	4.60	7.60
MW:							
Miscellaneous water.							
W:							
Water.							

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
27B2	Miami silt loam, 2 to 5 percent slopes, eroded
43A	Ipava silt loam, 0 to 2 percent slopes
51A	Muscatune silt loam, 0 to 2 percent slopes
56B2	Dana silt loam, 2 to 5 percent slopes, eroded
59A	Lisbon silt loam, 0 to 2 percent slopes
60B2	La Rose silt loam, 2 to 5 percent slopes, eroded
61A	Atterberry silt loam, 0 to 2 percent slopes (where drained)
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86A	Osco silt loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
86B2	Osco silt loam, 2 to 5 percent slopes, eroded
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
125A	Selma loam, 0 to 2 percent slopes (where drained)
134B2	Camden silt loam, 2 to 5 percent slopes, eroded
145B	Saybrook silt loam, 2 to 5 percent slopes
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded
146A	Elliott silt loam, 0 to 2 percent slopes
148B2	Proctor silt loam, 2 to 5 percent slopes, eroded
149A	Brenton silt loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
154A	Flanagan silt loam, 0 to 2 percent slopes
171B	Catlin silt loam, 2 to 5 percent slopes
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded
193B2	Mayville silt loam, 2 to 5 percent slopes, eroded
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
199B2	Plano silt loam, 2 to 5 percent slopes, eroded
213A	Normal silt loam, 0 to 2 percent slopes
223B2	Varna silt loam, 2 to 4 percent slopes, eroded
232A	Ashkum silty clay loam, 0 to 2 percent slopes (where drained)
233B	Birkbeck silt loam, 2 to 5 percent slopes
233B2	Birkbeck silt loam, 2 to 5 percent slopes, eroded
236A	Sabina silt loam, 0 to 2 percent slopes
244A	Hartsburg silty clay loam, 0 to 2 percent slopes (where drained)
272A	Edgington silt loam, 0 to 2 percent slopes (where drained)
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded
290A	Warsaw loam, 0 to 2 percent slopes
290B2	Warsaw loam, 2 to 5 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
322B2	Russell silt loam, 2 to 5 percent slopes, eroded
327B2	Fox silt loam, 2 to 5 percent slopes, eroded
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
343A	Kane silt loam, 0 to 2 percent slopes
481A	Raub silt loam, 0 to 2 percent slopes
496A	Fincastle silt loam, 0 to 2 percent slopes (where drained)
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded
567A	Elkhart silt loam, 0 to 2 percent slopes
567B	Elkhart silt loam, 2 to 5 percent slopes
567B2	Elkhart silt loam, 2 to 5 percent slopes, eroded
614B	Chenoa silty clay loam, 2 to 5 percent slopes
614B2	Chenoa silty clay loam, 2 to 5 percent slopes, eroded
622B2	Wyanet silt loam, 2 to 5 percent slopes, eroded
663A	Clare silt loam, 0 to 2 percent slopes
667A	Kaneville silt loam, 0 to 2 percent slopes
667B	Kaneville silt loam, 2 to 5 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
687B2	Penfield loam, 2 to 5 percent slopes, eroded
715A	Arrowsmith silt loam, 0 to 2 percent slopes
721A	Drummer and Elpaso silty clay loams, 0 to 2 percent slopes (where drained)
893B	Catlin-Saybrook silt loams, 2 to 5 percent slopes
902A	Ipava-Sable complex, 0 to 2 percent slopes (where drained)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8720A	Aetna silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 9.--Hydric Soils

Map symbol and map unit name	Component	Hydric	Local landform
17A:			
Keomah silt loam, 0 to 2 percent slopes	Keomah	No	Ground moraines
	Edgington	Yes	Swales
27B2:			
Miami silt loam, 2 to 5 percent slopes, eroded	Miami	No	Ground moraines
	Drummer	Yes	Swales
27C2:			
Miami silt loam, 5 to 10 percent slopes, eroded	Miami	No	Ground moraines
	Drummer	Yes	Swales
27D2:			
Miami silt loam, 10 to 18 percent slopes, eroded	Miami	No	Ground moraines
	Sawmill	Yes	Flood plains
43A:			
Ipava silt loam, 0 to 2 percent slopes	Ipava	No	Ground moraines
	Sable	Yes	Swales
51A:			
Muscatune silt loam, 0 to 2 percent slopes	Muscatune	No	Ground moraines
	Edgington	Yes	Depressions
	Sable	Yes	Swales
56B2:			
Dana silt loam, 2 to 5 percent slopes, eroded	Dana	No	Ground moraines
	Drummer	Yes	Swales
56C2:			
Dana silty clay loam, 5 to 10 percent slopes, eroded	Dana	No	Ground moraines
	Drummer	Yes	Swales
59A:			
Lisbon silt loam, 0 to 2 percent slopes	Lisbon	No	Ground moraines
	Drummer	Yes	Swales
60B2:			
La Rose silt loam, 2 to 5 percent slopes, eroded	La Rose	No	Ground moraines
	Drummer	Yes	Swales
60C2:			
La Rose silt loam, 5 to 10 percent slopes, eroded	La Rose	No	Ground moraines
	Drummer	Yes	Swales
60D2:			
La Rose silt loam, 10 to 18 percent slopes, eroded	La Rose	No	Ground moraines
61A:			
Atterberry silt loam, 0 to 2 percent slopes	Atterberry	No	Ground moraines
	Sable	Yes	Swales

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
67A:			
Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Yes	Outwash plains, ground moraines
68A:			
Sable silty clay loam, 0 to 2 percent slopes	Sable	Yes	Ground moraines
86A:			
Osco silt loam, 0 to 2 percent slopes	Osco	No	Ground moraines
	Sable	Yes	Swales
	Edgington	Yes	Depressions
86B:			
Osco silt loam, 2 to 5 percent slopes	Osco	No	Ground moraines
	Sable	Yes	Swales
86B2:			
Osco silt loam, 2 to 5 percent slopes, eroded	Osco	No	Ground moraines
	Sable	Yes	Swales
91B2:			
Swygert silty clay loam, 2 to 4 percent slopes, eroded	Swygert	No	Ground moraines
	Ashkum	Yes	Swales
	Peotone	Yes	Depressions
125A:			
Selma loam, 0 to 2 percent slopes	Selma	Yes	Outwash plains
134B2:			
Camden silt loam, 2 to 5 percent slopes, eroded	Camden	No	Outwash plains
	Drummer	Yes	Swales
134C2:			
Camden silt loam, 5 to 10 percent slopes, eroded	Camden	No	Outwash plains, stream terraces
	Drummer	Yes	Swales
145B:			
Saybrook silt loam, 2 to 5 percent slopes	Saybrook	No	Ground moraines
	Drummer	Yes	Swales
145B2:			
Saybrook silt loam, 2 to 5 percent slopes, eroded	Saybrook	No	Ground moraines
	Drummer	Yes	Swales
145C2:			
Saybrook silt loam, 5 to 10 percent slopes, eroded	Saybrook	No	Ground moraines
	Drummer	Yes	Swales
146A:			
Elliott silt loam, 0 to 2 percent slopes	Elliott	No	Ground moraines
	Ashkum	Yes	Swales

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
148B2:			
Proctor silt loam, 2 to 5 percent slopes, eroded	Proctor	No	Outwash plains
	Drummer	Yes	Swales
148C2:			
Proctor silt loam, 5 to 10 percent slopes, eroded	Proctor	No	Outwash plains
	Drummer	Yes	Swales
149A:			
Brenton silt loam, 0 to 2 percent slopes	Brenton	No	Outwash plains
	Drummer	Yes	Swales
152A:			
Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Yes	Outwash plains
154A:			
Flanagan silt loam, 0 to 2 percent slopes	Flanagan	No	Ground moraines
	Drummer	Yes	Swales
171B:			
Catlin silt loam, 2 to 5 percent slopes	Catlin	No	Ground moraines
	Drummer	Yes	Swales
171B2:			
Catlin silt loam, 2 to 5 percent slopes, eroded	Catlin	No	Ground moraines
	Drummer	Yes	Swales
171C2:			
Catlin silt loam, 5 to 10 percent slopes, eroded	Catlin	No	Ground moraines
	Drummer	Yes	Swales
193B2:			
Mayville silt loam, 2 to 5 percent slopes, eroded	Mayville	No	Ground moraines
	Drummer	Yes	Swales
193C2:			
Mayville silt loam, 5 to 10 percent slopes, eroded	Mayville	No	Ground moraines
	Drummer	Yes	Swales
198A:			
Elburn silt loam, 0 to 2 percent slopes	Elburn	No	Outwash plains
	Drummer	Yes	Swales
199A:			
Plano silt loam, 0 to 2 percent slopes	Plano	No	Outwash plains, stream terraces
	Drummer	Yes	Swales
199B:			
Plano silt loam, 2 to 5 percent slopes	Plano	No	Outwash plains, stream terraces
	Drummer	Yes	Swales

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
199B2:			
Plano silt loam, 2 to 5 percent slopes, eroded	Plano	No	Outwash plains
	Drummer	Yes	Swales
213A:			
Normal silt loam, 0 to 2 percent slopes	Normal	No	Outwash plains
	Edgington	Yes	Swales, depressions
223B2:			
Varna silt loam, 2 to 4 percent slopes, eroded	Varna	No	Ground moraines
	Ashkum	Yes	Swales
223C2:			
Varna silty clay loam, 4 to 6 percent slopes, eroded	Varna	No	Ground moraines
	Ashkum	Yes	Swales
224C2: Strawn loam, 5 to 10 percent slopes, eroded	Strawn	No	Ground moraines
224G: Strawn loam, 35 to 60 percent slopes	Strawn	No	Ground moraines
232A:			
Ashkum silty clay loam, 0 to 2 percent slopes	Ashkum	Yes	Ground moraines, end moraines
233B:			
Birkbeck silt loam, 2 to 5 percent slopes	Birkbeck	No	Ground moraines, end moraines
	Sable	Yes	Swales
	Drummer	Yes	Swales
233B2:			
Birkbeck silt loam, 2 to 5 percent slopes, eroded	Birkbeck	No	Ground moraines
	Sable	Yes	Swales
	Drummer	Yes	Swales
233C2:			
Birkbeck silt loam, 5 to 10 percent slopes, eroded	Birkbeck	No	Ground moraines
	Sable	Yes	Swales
236A:			
Sabina silt loam, 0 to 2 percent slopes	Sabina	No	Ground moraines
	Sable	Yes	Swales
244A:			
Hartsburg silty clay loam, 0 to 2 percent slopes	Hartsburg	Yes	Outwash plains, ground moraines
272A:			
Edgington silt loam, 0 to 2 percent slopes	Edgington	Yes	Ground moraines

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
279B2:			
Rozetta silt loam, 2 to 5 percent slopes, eroded	Rozetta	No	Ground moraines
	Sable	Yes	Swales
290A:			
Warsaw loam, 0 to 2 percent slopes	Warsaw	No	Outwash terraces, outwash plains
	Selma	Yes	Swales
290B2:			
Warsaw loam, 2 to 5 percent slopes, eroded	Warsaw	No	Terraces, outwash plains
	Selma	Yes	Swales
293A:			
Andres silt loam, 0 to 2 percent slopes	Andres	No	Ground moraines
	Ashkum	Yes	Swales
294B:			
Symerton silt loam, 2 to 5 percent slopes	Symerton	No	Ground moraines
	Ashkum	Yes	Swales
318B2:			
Lorenzo silt loam, 2 to 5 percent slopes, eroded	Lorenzo	No	Outwash terraces
	Selma	Yes	Swales
322B2:			
Russell silt loam, 2 to 5 percent slopes, eroded	Russell	No	Till plains
	Drummer	Yes	Swales
322C2:			
Russell silt loam, 5 to 10 percent slopes, eroded	Russell	No	Ground moraines, end moraines
	Drummer	Yes	Swales
327B2:			
Fox silt loam, 2 to 5 percent slopes, eroded	Fox	No	Stream terraces, outwash plains
	Drummer	Yes	Swales
	Selma	Yes	Swales
327C2:			
Fox silt loam, 5 to 10 percent slopes, eroded	Fox	No	Stream terraces, outwash plains
	Drummer	Yes	Swales
	Selma	Yes	Swales
330A:			
Peotone silty clay loam, 0 to 2 percent slopes	Peotone	Yes	Closed depressions

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
343A:			
Kane silt loam, 0 to 2 percent slopes	Kane	No	Outwash terraces, outwash plains
	Selma	Yes	Swales
	Drummer	Yes	Swales
481A:			
Raub silt loam, 0 to 2 percent slopes	Raub	No	Ground moraines
	Drummer	Yes	Swales
496A:			
Fincastle silt loam, 0 to 2 percent slopes	Fincastle	No	Ground moraines, end moraines
	Drummer	Yes	Swales
533:			
Urban land	Urban land	No	---
	Drummer	Yes	Outwash plains
541B2:			
Graymont silt loam, 2 to 5 percent slopes, eroded	Graymont	No	Ground moraines, end moraines
	Ashkum	Yes	Swales
567A:			
Elkhart silt loam, 0 to 2 percent slopes	Elkhart	No	Ground moraines
	Hartsburg	Yes	Swales
567B:			
Elkhart silt loam, 2 to 5 percent slopes	Elkhart	No	Ground moraines
	Hartsburg	Yes	Swales
567B2:			
Elkhart silt loam, 2 to 5 percent slopes, eroded	Elkhart	No	Ground moraines
	Hartsburg	Yes	Swales
570D2:			
Martinsville silt loam, 10 to 18 percent slopes, eroded	Martinsville	No	Stream terraces
614B:			
Chenoa silty clay loam, 2 to 5 percent slopes	Chenoa	No	Ground moraines, end moraines
	Ashkum	Yes	Swales
	Elpaso	Yes	Swales
614B2:			
Chenoa silty clay loam, 2 to 5 percent slopes, eroded	Chenoa	No	Ground moraines
	Ashkum	Yes	Swales
	Elpaso	Yes	Swales
622B2:			
Wyanet silt loam, 2 to 5 percent slopes, eroded	Wyanet	No	Ground moraines, end moraines
	Drummer	Yes	Swales

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
622C2:			
Wyanet silt loam, 5 to 10 percent slopes, eroded	Wyanet	No	Ground moraines, end moraines
	Drummer	Yes	Swales
663A:			
Clare silt loam, 0 to 2 percent slopes	Clare	No	Outwash plains
	Drummer	Yes	Swales
667A:			
Kaneville silt loam, 0 to 2 percent slopes	Kaneville	No	Outwash plains, stream terraces
	Drummer	Yes	Swales
	Edgington	Yes	Swales
667B:			
Kaneville silt loam, 2 to 5 percent slopes	Kaneville	No	Stream terraces
	Drummer	Yes	Swales
	Edgington	Yes	Swales
687B2:			
Penfield loam, 2 to 5 percent slopes, eroded	Penfield	No	Outwash plains
	Selma	Yes	Swales
	Drummer	Yes	Swales
687C2:			
Penfield loam, 5 to 10 percent slopes, eroded	Penfield	No	Outwash plains
	Selma	Yes	Swales
	Drummer	Yes	Swales
715A:			
Arrowsmith silt loam, 0 to 2 percent slopes	Arrowsmith	No	Ground moraines
	Hartsburg	Yes	Swales
	Sable	Yes	Swales
721A:			
Drummer and Elpaso silty clay loams, 0 to 2 percent slopes	Drummer	Yes	Outwash plains
	Elpaso	Yes	Ground moraines
802B:			
Orthents, loamy, undulating	Orthents	No	---
	Drummer	Yes	Outwash plains
865:			
Pits, gravel	Pits	No	---
	Selma	Yes	Outwash plains
893B:			
Catlin-Saybrook silt loams, 2 to 5 percent slopes	Catlin	No	Ground moraines
	Saybrook	No	Ground moraines
	Drummer	Yes	Swales
902A:			
Ipava-Sable complex, 0 0 to 2 percent slopes	Ipava	No	Ground moraines
	Sable	Yes	Ground moraines
	Peotone	Yes	Closed depressions

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric	Local landform
964D:			
Miami and Hennepin soils, 10 to 18 percent slopes	Miami	No	End moraines
	Hennepin	No	End moraines
	Sawmill	Yes	Flood plains
964F:			
Miami and Hennepin soils, 18 to 35 percent slopes	Miami	No	End moraines
	Hennepin	No	End moraines
	Sawmill	Yes	Flood plains
3107A:			
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Yes	Flood plains
8073A:			
Ross loam, 0 to 2 percent slopes, occasionally flooded	Ross	No	Flood plains
	Sawmill	Yes	Swales
8074A:			
Radford silt loam, 0 to 2 percent slopes, occasionally flooded	Radford	No	Flood plains
	Sawmill	Yes	Swales
8077A:			
Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	Huntsville	No	Flood plains
	Sawmill	Yes	Swales
8107A:			
Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	Sawmill	Yes	Flood plains
8451A:			
Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson	No	Flood plains
	Sawmill	Yes	Swales
8720A:			
Aetna silt loam, 0 to 2 percent slopes, occasionally flooded	Aetna	No	Flood plains
	Sawmill	Yes	Swales
MW:			
Miscellaneous water.			
W:			
Water.			

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees gener ally do not grow to the given height on the soil.)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
17A: Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
27B2, 27C2, 27D2: Miami	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
43A: Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
51A: Muscatune	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
56B2, 56C2: Dana	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
59A:					
Lisbon	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
60B2, 60C2, 60D2:					
La Rose	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
61A:					
Atterberry	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
67A:					
Harpster	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
68A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
86A, 86B, 86B2: Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
91B2: Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
125A: Selma	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
134B2, 134C2: Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
145B, 145B2, 145C2: Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
146A: Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
148B2, 148C2: Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
149A: Brenton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
152A: Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
154A: Flanagan	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
171B, 171B2, 171C2: Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
193B2, 193C2: Mayville	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
198A: Elburn	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
199A, 199B, 199B2: Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
213A: Normal	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
223B2: Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
223C2: Varna	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
224C2, 224G: Strawn	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
232A: Ashkum	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
233B, 233B2, 233C2: Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
236A: Sabina	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
244A: Hartsburg	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood, green ash	---
272A: Edgington	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
279B2: Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
290A, 290B2:					
Warsaw	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
293A:					
Andres	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
294B:					
Symerton	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
318B2:					
Lorenzo	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
322B2, 322C2:					
Russell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
327B2, 327C2:					
Fox	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
330A:					
Peotone	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
343A:					
Kane	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
481A:					
Raub	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
496A:					
Fincastle	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
533: Urban land.					
541B2: Graymont	Silky dogwood	American cranberrybush	Washington hawthorn, blue spruce, northern white-cedar, white fir	Austrian pine, Norway spruce	Pin oak, eastern white pine
567A, 567B, 567B2: Elkhart	American hazelnut, common winterberry, gray dogwood, redosier dogwood	Blackhaw, common chokecherry, common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	American sycamore, arborvitae, blue spruce, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Carolina poplar, eastern cottonwood	---
570D2: Martinsville	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
614B, 614B2: Chenoa	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
622B2, 622C2: Wyanet	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
663A: Clare	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
667A, 667B: Kaneville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
687B2, 687C2: Penfield	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
715A: Arrowsmith	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
721A: Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
721A: Elpaso	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
802B: Orthents	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
865: Pits, gravel.					
893B: Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
902A: Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
902A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
964D, 964F:					
Miami	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Hennepin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
3107A:					
Sawmill	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8073A:					
Ross	Common winterberry, gray dogwood, redosier dogwood, silky dogwood	Blackhaw, common pawpaw, common serviceberry, downy arrowwood, roughleaf dogwood, southern arrowwood	Austrian pine, arborvitae, bur oak, common hackberry, eastern redcedar, green ash, green hawthorn, nannyberry	Carolina poplar, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8074A: Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8077A: Huntsville	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8107A: Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8451A: Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8720A:					
Aetna	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
MW:					
Miscellaneous water.					
W:					
Water.					

Table 11.--Forestland Productivity

(Only the soils suitable for the production of commercial trees are listed.)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
17A:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	White oak	65	43	
27B2:				
Miami	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Sweetgum	76	72	
	Tuliptree	98	100	
27C2:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
27D2:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
61A:				
Atterberry	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
134B2:				
Camden	White oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	76	72	
	Northern red oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	White oak	85	72	
	Green ash	76	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
193B2:				
Mayville	American basswood	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Bitternut hickory	---	---	
	Northern red oak	65	57	
	Silver maple	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Suggested trees to plant
193C2:				
Mayville	American basswood	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Bitternut hickory	---	---	
	Northern red oak	65	57	
	Silver maple	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
224C2:				
Strawn	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
224G:				
Strawn	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
233B:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
233B2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
233C2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
236A:				
Sabina	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Northern red oak	80	57	
279B2:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
322B2:				
Russell	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Sweetgum	76	72	
	Tuliptree	96	100	
	White oak	90	72	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
322C2:				
Russell	White oak	90	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	90	72	
	Tuliptree	96	100	
327B2:				
Fox	Northern red oak	80	57	Black oak, common hackberry, eastern white pine, green ash
	Sugar maple	---	---	
	White oak	---	---	
327C2:				
Fox	Northern red oak	80	57	Black oak, common hackberry, eastern white pine, green ash
	Sugar maple	---	---	
	White oak	---	---	
496A:				
Fincastle	White oak	75	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Northern red oak	75	57	
	Pin oak	85	72	
	Tuliptree	85	86	
570D2:				
Martinsville	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	80	57	
667A:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
667B:				
Kaneville	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
964D:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
Hennepin	Northern red oak	85	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak			
	Black walnut			
964F:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
Hennepin	Northern red oak	85	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak			

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
3107A:				
Sawmill	Pin oak	90	72	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	American sycamore	---	---	
	Eastern cottonwood	---	---	
	Sweetgum	---	---	
8073A:				
Ross	Black cherry	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
8074A:				
Radford	Pin oak	80	72	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Tuliptree	90	86	
	Sweetgum	86	100	
	Eastern cottonwood			
	White ash			
8077A:				
Huntsville	American sycamore	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Cherrybark oak	---	---	
	Eastern cottonwood	110	157	
	Green ash	---	---	
	Sweetgum	---	---	
	Tuliptree	98	100	
8107A:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	
8451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	White ash	---	---	
8720A:				
Aetna	Red maple	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Silver maple	80	29	
	White ash	---	---	

Table 12a.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
27B2:						
Miami	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
					Slope	0.13
27C2:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	1.00
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.39
27D2:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
51A:						
Muscatune	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
56B2:						
Dana	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
					Depth to saturated zone	0.39
56C2:						
Dana	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	1.00
					Depth to saturated zone	0.39
59A:						
Lisbon	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	1.00

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
60B2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
60C2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	1.00
	Slope	0.01	Slope	0.01	Restricted permeability	0.21
60D2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
61A:						
Atterberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
86A:						
Osco	Not limited		Not limited		Not limited	
86B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
86B2:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
					Slope	0.13
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.13
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134B2:						
Camden	Not limited		Not limited		Somewhat limited	
					Slope	0.01
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.13
					Depth to saturated zone	0.03
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.50
					Depth to saturated zone	0.03
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	1.00
					Depth to saturated zone	0.03
146A:						
Elliott	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.88	Restricted permeability	0.96
148B2:						
Proctor	Not limited		Not limited		Somewhat limited	
					Slope	0.28
148C2:						
Proctor	Not limited		Not limited		Very limited	
					Slope	1.00
149A:						
Brenton	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.83	Depth to saturated zone	1.00
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
154A:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
171B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
					Slope	0.13
171B2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Slope	0.13
171C2:						
Catlin	Not limited		Not limited		Very limited	
					Slope	1.00
193B2:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Slope	0.13
193C2:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.39	Restricted permeability	0.21	Slope	1.00
	Restricted permeability	0.21	Depth to saturated zone	0.19	Depth to saturated zone	0.39
					Restricted permeability	0.21
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
199A:						
Plano	Not limited		Not limited		Not limited	
199B:						
Plano	Not limited		Not limited		Somewhat limited	
					Slope	0.28
199B2:						
Plano	Not limited		Not limited		Somewhat limited	
					Slope	0.28
213A:						
Normal	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
					Slope	0.13

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
223C2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.87
					Depth to saturated zone	0.39
224C2:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
224G:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
233B:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Slope	0.28
233B2:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Slope	0.01
233C2:						
Birkbeck	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.28	Depth to saturated zone	0.14	Slope	1.00
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.28
236A:						
Sabina	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
272A:						
Edgington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
279B2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.24	Depth to saturated zone	0.12	Depth to saturated zone	0.24
					Slope	0.13
290A:						
Warsaw	Not limited		Not limited		Not limited	
290B2:						
Warsaw	Not limited		Not limited		Somewhat limited	
					Slope	0.28
293A:						
Andres	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
294B:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.28
318B2:						
Lorenzo	Not limited		Not limited		Somewhat limited	
					Slope	0.28
322B2:						
Russell	Not limited		Not limited		Somewhat limited	
					Slope	0.13
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
327B2:						
Fox	Not limited		Not limited		Somewhat limited	
					Slope	0.01
327C2:						
Fox	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
343A:						
Kane	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	1.00

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
481A:						
Raub	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
496A:						
Fincastle	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
533:						
Urban land	Not rated		Not rated		Not rated	
541B2:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Slope	0.13
567A:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.24	Depth to saturated zone	0.12	Depth to saturated zone	0.24
567B:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
					Slope	0.13
567B2:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
					Slope	0.01
570D2:						
Martinsville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
614B:						
Chenoa	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.28
					Restricted permeability	0.21
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.28
					Restricted permeability	0.21

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
622B2:						
Wyanet	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.28
					Restricted permeability	0.21
622C2:						
Wyanet	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	1.00
					Restricted permeability	0.21
663A:						
Clare	Not limited		Not limited		Not limited	
667A:						
Kaneville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
667B:						
Kaneville	Not limited		Not limited		Somewhat limited	
					Slope	0.13
687B2:						
Penfield	Not limited		Not limited		Somewhat limited	
					Slope	0.28
687C2:						
Penfield	Not limited		Not limited		Very limited	
					Slope	1.00
715A:						
Arrowsmith	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
721A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
893B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
					Slope	0.13
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.13
					Depth to saturated zone	0.03
902A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
964D:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Hennepin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.39	Restricted permeability	0.21	Depth to saturated zone	0.39
	Restricted permeability	0.21	Depth to saturated zone	0.19	Restricted permeability	0.21
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
8073A:						
Ross	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8074A:						
Radford	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.48	Depth to saturated zone	0.81
	Depth to saturated zone	0.81			Flooding	0.60

Table 12a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
8077A:						
Huntsville----------	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8451A:						
Lawson--------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60
8720A:						
Aetna---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00			Flooding	0.60
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water---------------	Not rated		Not rated		Not rated	

Table 12b.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
17A:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
27B2:						
Miami	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
27C2:						
Miami	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
					Slope	0.01
27D2:						
Miami	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Depth to saturated zone	0.19
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
51A:						
Muscatune	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
56B2:						
Dana	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
56C2:						
Dana	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
59A:						
Lisbon	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
60B2:						
La Rose	Not limited		Not limited		Somewhat limited	
					Droughty	0.81
60C2:						
La Rose	Not limited		Not limited		Somewhat limited	
					Droughty	0.67
					Slope	0.01

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
60D2:						
La Rose	Not limited		Not limited		Very limited	
					Droughty	1.00
					Slope	0.96
61A:						
Atterberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
86A:						
Osco	Not limited		Not limited		Not limited	
86B:						
Osco	Not limited		Not limited		Not limited	
86B2:						
Osco	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
134B2:						
Camden	Not limited		Not limited		Not limited	
134C2:						
Camden	Not limited		Not limited		Not limited	
145B:						
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
145B2:						
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
145C2:						
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
146A:						
Elliott	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
148B2:						
Proctor	Not limited		Not limited		Not limited	
148C2:						
Proctor	Not limited		Not limited		Not limited	
149A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
154A:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
171B:						
Catlin	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
171B2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
171C2:						
Catlin	Not limited		Not limited		Not limited	
193B2:						
Mayville	Not limited		Not limited		Not limited	
193C2:						
Mayville	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
199A:						
Plano	Not limited		Not limited		Not limited	

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
199B:						
Plano	Not limited		Not limited		Not limited	
199B2:						
Plano	Not limited		Not limited		Not limited	
213A:						
Normal	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
223B2:						
Varna	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
223C2:						
Varna	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
224C2:						
Strawn	Not limited		Not limited		Somewhat limited	
					Droughty	0.20
					Slope	0.01
224G:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.33
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
233B:						
Birkbeck	Not limited		Not limited		Not limited	
233B2:						
Birkbeck	Not limited		Not limited		Not limited	
233C2:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.14
					Slope	0.01
236A:						
Sabina	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
272A:						
Edgington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
279B2:						
Rozetta	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.12
290A:						
Warsaw	Not limited		Not limited		Not limited	
290B2:						
Warsaw	Not limited		Not limited		Not limited	
293A:						
Andres	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
294B:						
Symerton	Not limited		Not limited		Not limited	
318B2:						
Lorenzo	Not limited		Not limited		Somewhat limited	
					Droughty	0.41
322B2:						
Russell	Not limited		Not limited		Not limited	
322C2:						
Russell	Not limited		Not limited		Somewhat limited	
					Slope	0.01
327B2:						
Fox	Not limited		Not limited		Not limited	
327C2:						
Fox	Not limited		Not limited		Somewhat limited	
					Slope	0.01
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
343A:						
Kane	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
481A:						
Raub	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
496A:						
Fincastle	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
533:						
Urban land	Not rated		Not rated		Not rated	
541B2:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
567A:						
Elkhart	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.12
567B:						
Elkhart	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
567B2:						
Elkhart	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
570D2:						
Martinsville	Somewhat limited		Not limited		Very limited	
	Slope	0.01			Slope	1.00
614B:						
Chenoa	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
622B2:						
Wyanet	Not limited		Not limited		Not limited	
622C2:						
Wyanet	Not limited		Not limited		Not limited	
663A:						
Clare	Not limited		Not limited		Not limited	
667A:						
Kaneville	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
667B:						
Kaneville	Not limited		Not limited		Not limited	
687B2:						
Penfield	Not limited		Not limited		Not limited	

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
687C2:						
Penfield	Not limited		Not limited		Not limited	
715A:						
Arrowsmith	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
721A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
802B:						
Orthents, loamy	Not limited		Not limited		Not limited	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
893B:						
Catlin	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
902A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
964D:						
Miami	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Depth to saturated zone	0.19
Hennepin	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Droughty	0.83
964F:						
Miami	Somewhat limited		Not limited		Very limited	
	Slope	0.98			Slope	1.00
					Depth to saturated zone	0.19

Table 12b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
964F:						
Hennepin------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Slope	1.00
					Droughty	0.82
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40		
8073A:						
Ross----------------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8074A:						
Radford-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Flooding	0.60
					Depth to saturated zone	0.48
8077A:						
Huntsville----------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
					Flooding	0.60
8451A:						
Lawson--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
8720A:						
Aetna---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water---------------	Not rated		Not rated		Not rated	

Table 13.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
17A: Keomah	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
27B2: Miami	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
27C2: Miami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
27D2: Miami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
43A: Ipava	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
51A: Muscatune	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
56B2: Dana	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
56C2: Dana	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
59A: Lisbon	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
60B2: La Rose	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
60C2: La Rose	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
60D2: La Rose	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
61A: Atterberry	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
67A: Harpster	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
68A: Sable	Fair	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
86A: Osco	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
86B: Osco	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
86B2: Osco	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
91B2: Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
125A: Selma	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
134B2: Camden	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
134C2: Camden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145B: Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145B2: Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145C2: Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
146A: Elliott	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
148B2: Proctor	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
148C2: Proctor	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
149A: Brenton	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
152A: Drummer	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
154A: Flanagan	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
171B: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171B2: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
171C2: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
193B2: Mayville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
193C2: Mayville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
198A: Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
199A: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
199B: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
199B2: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
213A: Normal	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
223B2: Varna	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
223C2: Varna	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
224C2: Strawn	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
224G: Strawn	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
232A: Ashkum	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
233B: Birkbeck	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233B2: Birkbeck	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
233C2: Birkbeck	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
236A: Sabina	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
244A: Hartsburg	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
272A: Edgington	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good
279B2: Rozetta	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
290A: Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
290B2: Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
293A: Andres	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
294B: Symerton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
318B2: Lorenzo	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
322B2: Russell	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
322C2: Russell	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
327B2: Fox	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
327C2: Fox	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
330A: Peotone	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
343A: Kane	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
481A: Raub	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
496A: Fincastle	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
533: Urban land.										
541B2: Graymont	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
567A:										
Elkhart-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
567B:										
Elkhart-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
567B2:										
Elkhart-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570D2:										
Martinsville------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
614B:										
Chenoa------------	Good	Good	Good	Good	Good	Fair	Fair	Good	Poor	Fair
614B2:										
Chenoa------------	Good	Good	Good	Good	Good	Fair	Fair	Good	Poor	Fair
622B2:										
Wyanet------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
622C2:										
Wyanet------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
663A:										
Clare-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
667A:										
Kaneville---------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
667B:										
Kaneville---------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
687B2:										
Penfield----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
687C2:										
Penfield----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
715A:										
Arrowsmith--------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
721A:										
Drummer-----------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Elpaso------------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
802B:										
Orthents, loamy---	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
865:										
Pits, gravel.										

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
893B:										
Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
902A:										
Ipava	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Sable	Fair	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
964D:										
Miami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Hennepin	Fair	Good	Good	Fair	Good	Very poor	Very poor	Good	Good	Very poor
964F:										
Miami	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Hennepin	Poor	Fair	Good	Fair	Good	Very poor	Very poor	Fair	Good	Very poor
3107A:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
8073A:										
Ross	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8074A:										
Radford	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8077A:										
Huntsville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
8107A:										
Sawmill	Good	Good	Good	Fair	Fair	Good	Fair	Good	Fair	Fair
8451A:										
Lawson	Good	Good	Fair	Good	Good	Fair	Fair	Good	Good	Fair
8720A:										
Aetna	Good	Good	Good	Good	Good	Good	Fair	Good	Good	Good
MW:										
Miscellaneous water.										
W:										
Water.										

Table 14a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00			Depth to saturated zone	1.00
27B2:						
Miami	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
27C2:						
Miami	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.39
27D2:						
Miami	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.96	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
43A:						
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
51A:						
Muscatune	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
56B2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
					Slope	0.01
56C2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.96
	Depth to saturated zone	0.39	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to saturated zone	0.39

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
59A: Lisbon	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50
60B2: La Rose	Somewhat limited Shrink-swell	 0.50	Not limited		Somewhat limited Shrink-swell Slope	 0.50 0.01
60C2: La Rose	Somewhat limited Shrink-swell Slope	 0.50 0.01	Somewhat limited Slope	 0.01	Very limited Slope Shrink-swell	 1.00 0.50
60D2: La Rose	Somewhat limited Slope Shrink-swell	 0.96 0.50	Somewhat limited Slope	 0.96	Very limited Slope Shrink-swell	 1.00 0.50
61A: Atterberry	Somewhat limited Depth to saturated zone Shrink-swell	 0.98 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	 0.98 0.50
67A: Harpster	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50
68A: Sable	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Shrink-swell	 1.00 1.00 0.50
86A: Osco	Somewhat limited Shrink-swell	 0.50	Somewhat limited Depth to saturated zone Shrink-swell	 0.61 0.50	Somewhat limited Shrink-swell	 0.50
86B: Osco	Somewhat limited Shrink-swell	 0.50	Somewhat limited Shrink-swell Depth to saturated zone	 0.50 0.15	Somewhat limited Shrink-swell	 0.50
86B2: Osco	Somewhat limited Shrink-swell Depth to saturated zone	 0.50 0.16	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Somewhat limited Shrink-swell Depth to saturated zone	 0.50 0.16

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
125A:						
Selma	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
134B2:						
Camden	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.96
					Shrink-swell	0.50
145B:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03	Shrink-swell	0.50	Depth to saturated zone	0.03
145B2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03	Shrink-swell	0.50	Depth to saturated zone	0.03
					Slope	0.01
145C2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.86
	Depth to saturated zone	0.03	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to saturated zone	0.03
146A:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
148B2:						
Proctor	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
148C2:						
Proctor	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.96
					Shrink-swell	0.50
149A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
152A:						
Drummer	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
154A:						
Flanagan	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
171B:						
Catlin	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
171B2:						
Catlin	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
171C2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.86
			Shrink-swell	0.50	Shrink-swell	0.50
193B2:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.98	Shrink-swell	0.50
193C2:						
Mayville	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39			Slope	0.48
					Depth to saturated zone	0.39
198A:						
Elburn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199A:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B2:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213A:						
Normal----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50			Shrink-swell	0.50
223B2:						
Varna-----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
223C2:						
Varna-----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
					Slope	0.12
224C2:						
Strawn----------	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.01	Slope	0.01	Shrink-swell	0.50
224G:						
Strawn----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
232A:						
Ashkum----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
233B:						
Birkbeck--------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.92	Depth to saturated zone	1.00	Shrink-swell	0.92
			Shrink-swell	0.92		
233B2:						
Birkbeck--------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
			Shrink-swell	0.50		
233C2:						
Birkbeck--------	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.28	Shrink-swell	0.50	Shrink-swell	0.50
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.28
236A:						
Sabina----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
272A:						
Edgington	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	0.50		
279B2:						
Rozetta	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.24	Shrink-swell	0.50	Depth to saturated zone	0.24
290A:						
Warsaw	Not limited		Not limited		Not limited	
290B2:						
Warsaw	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
293A:						
Andres	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
294B:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.97	Shrink-swell	0.50
318B2:						
Lorenzo	Not limited		Not limited		Not limited	
322B2:						
Russell	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.01	Slope	0.01	Shrink-swell	0.50
327B2:						
Fox	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
327C2:						
Fox	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Slope	0.01	Slope	1.00
	Slope	0.01			Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
330A:						
Peotone---------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
343A:						
Kane------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.06	Shrink-swell	0.06	Shrink-swell	0.06
481A:						
Raub------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
496A:						
Fincastle-------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
533:						
Urban land------	Not rated		Not rated		Not rated	
541B2:						
Graymont--------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
567A:						
Elkhart---------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.24			Depth to saturated zone	0.24
567B:						
Elkhart---------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16			Depth to saturated zone	0.16
567B2:						
Elkhart---------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16			Depth to saturated zone	0.16
570D2:						
Martinsville----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
614B:						
Chenoa----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
614B2:						
Chenoa----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
622B2:						
Wyanet----------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
622C2:						
Wyanet----------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.96
					Shrink-swell	0.50
663A:						
Clare-----------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
667A:						
Kaneville-------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
667B:						
Kaneville-------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
			Shrink-swell	0.50		
687B2:						
Penfield--------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.22	Depth to saturated zone	0.76	Shrink-swell	0.22
			Shrink-swell	0.22		
687C2:						
Penfield--------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.86
					Shrink-swell	0.50
715A:						
Arrowsmith------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
721A:						
Drummer---------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
721A:						
Elpaso----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47	Slope	0.01
865:						
Pits, gravel----	Not rated		Not rated		Not rated	
893B:						
Catlin----------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
Saybrook--------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03	Shrink-swell	0.50	Depth to saturated zone	0.03
902A:						
Ipava-----------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
Sable-----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
964D:						
Miami-----------	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.96	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Hennepin--------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.22	Shrink-swell	0.22	Shrink-swell	0.22
964F:						
Miami-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Hennepin--------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
			Shrink-swell	0.50		
8077A:						
Huntsville	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.05		
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 14b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
27B2:						
Miami	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
27C2:						
Miami	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Depth to saturated zone	0.19	Cutbanks cave	0.10	Slope	0.01
	Slope	0.01	Slope	0.01		
27D2:						
Miami	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
43A:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
51A:						
Muscatune	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
56B2:						
Dana	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.19				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
56C2:						
Dana	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.19				
59A:						
Lisbon	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.96				
	Shrink-swell	0.50				
60B2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Cutbanks cave	0.10	Droughty	0.81
	Frost action	0.50				
60C2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Cutbanks cave	0.10	Droughty	0.67
	Frost action	0.50	Slope	0.01	Slope	0.01
	Slope	0.01				
60D2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Low strength	0.78	Cutbanks cave	0.10	Droughty	0.67
	Frost action	0.50				
61A:						
Atterberry	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
67A:						
Harpster	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
68A:						
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
86A:						
Osco	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.61		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86B:						
Osco	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86B2:						
Osco	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.08				
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	1.00	Cutbanks cave	0.10		
	Frost action	0.50				
125A:						
Selma	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00		
134B2:						
Camden	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
134C2:						
Camden	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
145B:						
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
145B2:						
Saybrook----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
145C2:						
Saybrook----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
146A:						
Elliott-----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Depth to saturated zone	0.88	Depth to dense layer	0.50		
	Shrink-swell	0.50	Too clayey	0.32		
	Frost action	0.50	Cutbanks cave	0.10		
148B2:						
Proctor-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
148C2:						
Proctor-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
149A:						
Brenton-----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.83
	Low strength	1.00	Cutbanks cave	0.50		
	Depth to saturated zone	0.83				
	Shrink-swell	0.50				
152A:						
Drummer-----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
154A:						
Flanagan----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
171B:						
Catlin----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.08				
171B2:						
Catlin----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
171C2:						
Catlin----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
193B2:						
Mayville--------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.98		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
193C2:						
Mayville--------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.19				
198A:						
Elburn----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
199A:						
Plano-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B:						
Plano-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B2:						
Plano-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213A:						
Normal	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.78				
	Shrink-swell	0.50				
223B2:						
Varna	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	1.00	Depth to dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.19				
223C2:						
Varna	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	1.00	Depth to dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.19				
224C2:						
Strawn	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
	Slope	0.01	Slope	0.01	Slope	0.01
224G:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	0.10	Droughty	0.33
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
233B:						
Birkbeck	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.92				
233B2:						
Birkbeck	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233C2:						
Birkbeck	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.14
	Low strength	1.00	Cutbanks cave	0.10	Slope	0.01
	Shrink-swell	0.50	Slope	0.01		
	Depth to saturated zone	0.14				
	Slope	0.01				
236A:						
Sabina	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.96				
	Frost action	0.50				
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
272A:						
Edgington	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
279B2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.12
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.12				
290A:						
Warsaw	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
290B2:						
Warsaw	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
293A:						
Andres	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Depth to saturated zone	0.78	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
294B:						
Symerton	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50	Depth to saturated zone	0.97		
	Frost action	0.50				
318B2:						
Lorenzo	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.41
	Shrink-swell	0.22				
322B2:						
Russell	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
322C2:						
Russell	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	0.10	Slope	0.01
	Low strength	1.00	Slope	0.01		
	Shrink-swell	0.50				
	Slope	0.01				
327B2:						
Fox	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
327C2:						
Fox	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Cutbanks cave	1.00	Slope	0.01
	Shrink-swell	0.50	Slope	0.01		
	Frost action	0.50				
	Slope	0.01				
330A:						
Peotone	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
343A:						
Kane	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Frost action	0.50	Cutbanks cave	1.00		
	Shrink-swell	0.06				
481A:						
Raub	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
496A:						
Fincastle-------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Depth to	1.00
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	1.00	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				
533:						
Urban land------	Not rated		Not rated		Not rated	
541B2:						
Graymont--------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				
567A:						
Elkhart---------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.12
	Low strength	1.00	saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Depth to	0.12				
	saturated zone					
567B:						
Elkhart---------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.08
	Low strength	1.00	saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Depth to	0.08				
	saturated zone					
567B2:						
Elkhart---------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.08
	Low strength	1.00	saturated zone		saturated zone	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Depth to	0.08				
	saturated zone					
570D2:						
Martinsville----	Very limited		Very limited		Very limited	
	Low strength	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
614B:						
Chenoa----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to	0.75
	Shrink-swell	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone					
	Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
614B2:						
Chenoa----------	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	1.00				
	Frost action	0.50				
622B2:						
Wyanet----------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
622C2:						
Wyanet----------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
663A:						
Clare-----------	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
667A:						
Kaneville-------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.19				
667B:						
Kaneville-------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	1.00		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
687B2:						
Penfield--------	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Depth to saturated zone	0.76		
	Shrink-swell	0.22	Cutbanks cave	0.10		
687C2:						
Penfield--------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
715A:						
Arrowsmith------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.50		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
721A:						
Drummer	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
Elpaso	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50	Cutbanks cave	0.10		
	Low strength	0.22				
865:						
Pits, gravel	Not rated		Not rated		Not rated	
893B:						
Catlin	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.08				
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
902A:						
Ipava	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
964D:						
Miami	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
Hennepin	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Frost action	0.50	Cutbanks cave	0.10		
	Shrink-swell	0.22				
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.19
	Frost action	0.50	Depth to saturated zone	1.00		
	Low strength	0.22				
	Depth to saturated zone	0.19				
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	0.10	Droughty	0.82
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
8073A:						
Ross	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50	Cutbanks cave	0.10		
8074A:						
Radford	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.48
	Depth to saturated zone	0.48	Cutbanks cave	0.10		
8077A:						
Huntsville	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Depth to saturated zone	0.05		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
8451A:						
Lawson	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 15a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:				
Keomah	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
27B2:				
Miami	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.25
			Slope	0.09
27C2:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Slope	0.01	Depth to saturated zone	0.25
27D2:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.96	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.25
43A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
51A:				
Muscatune	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
56B2:				
Dana	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Restricted permeability	0.46	Slope	0.33
			Depth to saturated zone	0.25

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
56C2:				
Dana	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
			Depth to saturated zone	0.25
59A:				
Lisbon	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
60B2:				
La Rose	Very limited		Somewhat limited	
	Restricted permeability	1.00	Seepage	0.53
			Slope	0.33
60C2:				
La Rose	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.01	Seepage	0.53
60D2:				
La Rose	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.96		
61A:				
Atterberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
67A:				
Harpster	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
68A:				
Sable	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
86A:				
Osco	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.71
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
86B:				
Osco	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.19
86B2:				
Osco	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
91B2:				
Swygert	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.09
	Depth to saturated zone	1.00		
125A:				
Selma	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Restricted permeability	0.46	Depth to saturated zone	1.00
134B2:				
Camden	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.01
134C2:				
Camden	Somewhat limited		Very limited	
	Restricted permeability	0.46	Seepage	1.00
			Slope	1.00
145B:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.64
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
145B2:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.64
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.33
145C2:				
Saybrook	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Depth to saturated zone	0.64
			Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
146A:				
Elliott	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
148B2:				
Proctor	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.19
148C2:				
Proctor	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
149A:				
Brenton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
152A:				
Drummer	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
154A:				
Flanagan	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Restricted permeability	1.00	Seepage	0.53
171B:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.44
			Slope	0.09
171B2:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
171C2:				
Catlin	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Depth to saturated zone	0.92
			Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
193B2:				
Mayville	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
193C2:				
Mayville	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.91
			Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.25
198A:				
Elburn	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Restricted permeability	0.46		
199A:				
Plano	Somewhat limited		Very limited	
	Restricted permeability	0.46	Seepage	1.00
199B:				
Plano	Somewhat limited		Very limited	
	Restricted permeability	0.46	Seepage	1.00
			Slope	0.19
199B2:				
Plano	Somewhat limited		Very limited	
	Restricted permeability	0.46	Seepage	1.00
			Slope	0.19
213A:				
Normal	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
223B2:				
Varna	Very limited		Somewhat limited	
	Restricted permeability	1.00	Depth to saturated zone	0.25
	Depth to saturated zone	1.00	Slope	0.09
223C2:				
Varna	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.67
			Depth to saturated zone	0.25
	Depth to saturated zone	1.00		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
224C2:				
Strawn	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.01	Seepage	0.53
224G:				
Strawn	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
232A:				
Ashkum	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
233B:				
Birkbeck	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.81
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.19
233B2:				
Birkbeck	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.81
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.01
233C2:				
Birkbeck	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Slope	0.01	Depth to saturated zone	0.32
236A:				
Sabina	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
244A:				
Hartsburg	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
272A:				
Edgington	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
279B2:				
Rozetta	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.09
290A:				
Warsaw	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
290B2:				
Warsaw	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	0.19
	Restricted permeability	0.46		
293A:				
Andres	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
294B:				
Symerton	Very limited		Somewhat limited	
	Restricted permeability	1.00	Depth to saturated zone	0.81
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.19
318B2:				
Lorenzo	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	0.19
322B2:				
Russell	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
322C2:				
Russell	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Slope	0.01		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
327B2:				
Fox	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	0.01
327C2:				
Fox	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		
	Slope	0.01		
330A:				
Peotone	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
343A:				
Kane	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Poor filtering capacity	1.00		
	Restricted permeability	0.46		
481A:				
Raub	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.01
	Restricted permeability	0.46		
496A:				
Fincastle	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
533:				
Urban land	Not rated		Not rated	
541B2:				
Graymont	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.09
	Restricted permeability	0.46	Depth to saturated zone	0.01
567A:				
Elkhart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
567B:				
Elkhart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
567B2:				
Elkhart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.01
570D2:				
Martinsville	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
614B:				
Chenoa	Very limited		Somewhat limited	
	Restricted permeability	1.00	Depth to saturated zone	0.99
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.19
614B2:				
Chenoa	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Restricted permeability	1.00	Slope	0.19
622B2:				
Wyanet	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.19
622C2:				
Wyanet	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
663A:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
667A:				
Kaneville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
667B:				
Kaneville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
687B2:				
Penfield	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.95
	Restrictrd permeability	0.46	Seepage	0.53
			Slope	0.19
687C2:				
Penfield	Very limited		Very limited	
	Poor filtering capacity	1.00	Seepage	1.00
			Slope	1.00
	Restricted permeability	0.46		
715A:				
Arrowsmith	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
721A:				
Drummer	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
Elpaso	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
802B:				
Orthents, loamy	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.94	Depth to saturated zone	0.39
	Restricted permeability	0.78	Slope	0.33
			Seepage	0.21
865:				
Pits, gravel	Not rated		Not rated	
893B:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.44
	Restricted permeability	0.46		
			Slope	0.09

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
893B:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.64
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.09
902A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
Sable	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
964D:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.96	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.25
Hennepin	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.96	Seepage	0.53
964F:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Restricted permeability	0.46	Depth to saturated zone	0.25
Hennepin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
3107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
8074A:				
Radford-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
8077A:				
Huntsville----------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.12		
8107A:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
8451A:				
Lawson--------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
8720A:				
Aetna---------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
MW:				
Miscellaneous water	Not rated		Not rated	
W:				
Water---------------	Not rated		Not rated	

Table 15b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
27B2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
27C2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Slope	0.01	Slope	0.01	Slope	0.01
27D2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
43A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
51A:						
Muscatune	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
56B2:						
Dana	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
56C2:						
Dana	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
59A:						
Lisbon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
60B2:						
La Rose	Not limited		Not limited		Not limited	
60C2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.01	Slope	0.01	Slope	0.01
60D2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
61A:						
Atterberry	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
86A:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86B:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86B2:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Too clayey	0.50			Too clayey	0.50
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Depth to saturated zone	1.00

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00				
134B2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
134C2:						
Camden	Very limited		Not limited		Somewhat limited	
	Too sandy	1.00			Too sandy	0.50
	Seepage	1.00			Too clayey	0.50
					Seepage	0.22
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
	Too clayey	0.50			Too clayey	0.50
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
	Too clayey	0.50			Too clayey	0.50
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
	Too clayey	0.50			Too clayey	0.50
146A:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
148B2:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
148C2:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
149A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
154A:						
Flanagan	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
171B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.75
	Too clayey	0.50			Too clayey	0.50
171B2:						
Catlin	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
171C2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
193B2:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.62	Depth to saturated zone	0.02	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.20
193C2:						
Mayville	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
198A:						
Elburn	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
199A:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
199B:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
199B2:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
213A:						
Normal	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00			Too clayey	0.50
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
223C2:						
Varna	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
224C2:						
Strawn	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.01	Slope	0.01	Slope	0.01
224G:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
233B:						
Birkbeck	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
233B2:						
Birkbeck	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
233C2:						
Birkbeck	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.68	Depth to saturated zone	0.82
	Too clayey	0.50	Slope	0.01	Too clayey	0.50
	Slope	0.01			Slope	0.01
236A:						
Sabina	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
244A:						
Hartsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
272A:						
Edgington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
279B2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.80
	Too clayey	0.50			Too clayey	0.50
290A:						
Warsaw	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
290B2:						
Warsaw	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
293A:						
Andres	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
294B:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.53	Depth to saturated zone	0.01	Depth to saturated zone	0.14
318B2:						
Lorenzo	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
322B2:						
Russell	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
322C2:						
Russell	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Slope	0.01	Too clayey	0.50
	Slope	0.01			Slope	0.01
327B2:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00			Too sandy	1.00

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Trench sanitary landfill: Value	Area sanitary landfill: Rating class and limiting features	Area sanitary landfill: Value	Daily cover for landfill: Rating class and limiting features	Daily cover for landfill: Value
327C2:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00	Slope	0.01	Too sandy	1.00
	Slope	0.01			Slope	0.01
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
343A:						
Kane	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Too sandy	1.00
481A:						
Raub	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
496A:						
Fincastle	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
533:						
Urban land	Not rated		Not rated		Not rated	
541B2:						
Graymont	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
567A:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.80
567B:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
567B2:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
570D2:						
Martinsville	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
614B:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
622B2:						
Wyanet	Not limited		Not limited		Not limited	
622C2:						
Wyanet	Not limited		Not limited		Not limited	
663A:						
Clare	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
667A:						
Kaneville	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
667B:						
Kaneville	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.38
687B2:						
Penfield	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
687C2:						
Penfield	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
715A:						
Arrowsmith	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
721A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
721A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
802B:						
Orthents, loamy	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
865:						
Pits, gravel	Not rated		Not rated		Not rated	
893B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.75
	Too clayey	0.50			Too clayey	0.50
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
	Too clayey	0.50			Too clayey	0.50
902A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
964D:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
Hennepin	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8073A:						
Ross	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
8074A:						
Radford	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8077A:						
Huntsville	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
8720A:						
Aetna	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Too clayey	0.50				
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 16a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
17A:						
Keomah	Fair		Poor		Fair	
	Low content of organic matter	0.02	Low strength	0.00	Depth to saturated zone	0.04
	Too clayey	0.08	Depth to saturated zone	0.04	Too clayey	0.05
	Water erosion	0.68	Shrink-swell	0.89		
	Too acid	0.74				
27B2:						
Miami	Fair		Fair		Fair	
	Low content of organic matter	0.12	Depth to saturated zone	0.53	Depth to saturated zone	0.53
	Carbonate content	0.80			Hard to reclaim	0.80
	Droughty	0.83				
	Too acid	0.84				
	Water erosion	0.90				
27C2:						
Miami	Fair		Fair		Fair	
	Low content of organic matter	0.02	Depth to saturated zone	0.53	Depth to saturated zone	0.53
	Droughty	0.77			Hard to reclaim	0.94
	Water erosion	0.90				
	Carbonate content	0.92				
27D2:						
Miami	Fair		Fair		Fair	
	Low content of organic matter	0.08	Depth to saturated zone	0.53	Slope	0.04
	Droughty	0.75			Depth to saturated zone	0.53
	Too acid	0.84			Hard to reclaim	0.80
	Water erosion	0.90				
	Carbonate content	0.92				
43A:						
Ipava	Fair		Poor		Fair	
	Too clayey	0.18	Low strength	0.00	Too clayey	0.14
	Low content of organic matter	0.18	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Too acid	0.84	Shrink-swell	0.83		
	Water erosion	0.99				
51A:						
Muscatune	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Depth to saturated zone	0.14
	Too clayey	0.92	Depth to saturated zone	0.14	Too clayey	0.67
	Low content of organic matter	0.92	Shrink-swell	0.99		
	Water erosion	0.99				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
56B2:						
Dana	Fair		Poor		Fair	
	Carbonate content	0.92	Low strength	0.00	Depth to saturated zone	0.53
	Too acid	0.95	Depth to saturated zone	0.53	Too clayey	0.76
	Too clayey	0.98	Shrink-swell	0.87		
	Water erosion	0.99				
56C2:						
Dana	Fair		Poor		Fair	
	Carbonate content	0.92	Low strength	0.00	Depth to saturated zone	0.53
	Too clayey	0.98	Depth to saturated zone	0.53	Too clayey	0.76
	Water erosion	0.99	Shrink-swell	0.87		
59A:						
Lisbon	Fair		Fair		Fair	
	Carbonate content	0.84	Depth to saturated zone	0.02	Depth to saturated zone	0.02
	Too clayey	0.92			Hard to reclaim	0.71
	Too acid	0.99			Too clayey	0.92
	Water erosion	0.99				
60B2:						
La Rose	Fair		Good		Poor	
	Droughty	0.90			Hard to reclaim	0.00
	Low content of organic matter	0.32			Carbonate content	0.92
	Carbonate content	0.92				
	Too clayey	0.92				
	Water erosion	0.99				
60C2:						
La Rose	Fair		Good		Poor	
	Droughty	0.90			Hard to reclaim	0.00
	Low content of organic matter	0.32			Carbonate content	0.92
	Carbonate content	0.92				
	Too clayey	0.92				
	Water erosion	0.99				
60D2:						
La Rose	Fair		Good		Poor	
	Droughty	0.90			Hard to reclaim	0.00
	Low content of organic matter	0.32			Carbonate content	0.92
	Carbonate content	0.92				
	Too clayey	0.92				
	Water erosion	0.99				
61A:						
Atterberry	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Depth to saturated zone	0.14
	Too acid	0.54	Depth to saturated zone	0.14	Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.99	Too acid	0.98
	Too clayey	0.92				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
67A:						
Harpster	Fair		Poor		Poor	
	Carbonate content	0.80	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Water erosion	0.99	Shrink-swell	0.99		
68A:						
Sable	Fair		Poor		Poor	
	Water erosion	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.92
	Too acid	0.92	Shrink-swell	0.99		
86A:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
86B:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
86B2:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
91B2:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.80	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.92	Shrink-swell	0.47		
125A:						
Selma	Fair		Poor		Poor	
	Water erosion	0.99	Depth to saturated zone	0.00	Depth to saturated zone	0.00
134B2:						
Camden	Fair		Poor		Fair	
	Low content of organic matter	0.32	Low strength	0.00	Too clayey	0.51
	Too acid	0.54	Shrink-swell	0.99		
	Water erosion	0.68				
	Too clayey	0.82				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
134C2:						
Camden	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				
145B:						
Saybrook	Fair		Fair		Fair	
	Too acid	0.84	Depth to saturated zone	0.80	Hard to reclaim	0.65
	Low content of organic matter	0.88	Shrink-swell	0.87	Depth to saturated zone	0.80
	Water erosion	0.90				
145B2:						
Saybrook	Fair		Fair		Fair	
	Too acid	0.84	Depth to saturated zone	0.80	Hard to reclaim	0.65
	Low content of organic matter	0.88	Shrink-swell	0.87	Depth to saturated zone	0.80
	Water erosion	0.90				
145C2:						
Saybrook	Fair		Fair		Fair	
	Too acid	0.84	Depth to saturated zone	0.80	Hard to reclaim	0.65
	Low content of organic matter	0.88	Shrink-swell	0.87	Depth to saturated zone	0.80
	Water erosion	0.90				
146A:						
Elliott	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Depth to saturated zone	0.07
	Carbonate	0.84	Depth to saturated zone	0.07	Too clayey	0.55
	Too acid	0.84	Shrink-swell	0.74		
	Too clayey	0.92				
	Droughty	0.99				
	Water erosion	0.99				
148B2:						
Proctor	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.60
	Low content of organic matter	0.92				
	Too acid	0.99				
148C2:						
Proctor	Fair		Poor		Fair	
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Too acid	0.92	Shrink-swell	0.98		
	Water erosion	0.99				
149A:						
Brenton	Fair		Fair		Fair	
	Too clayey	0.82	Depth to saturated zone	0.09	Depth to saturated zone	0.09
	Too acid	0.84			Too clayey	0.64

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
152A:						
Drummer	Fair		Poor		Poor	
	Too acid Too clayey Water erosion	0.95 0.98 0.99	Depth to saturated zone Low strength Shrink-swell	0.00 0.00 0.99	Depth to saturated zone Too clayey	0.00 0.81
154A:						
Flanagan	Fair		Poor		Fair	
	Too clayey Low content of organic matter Too acid Water erosion Carbonate content	0.18 0.82 0.88 0.90 0.92	Low strength Depth to saturated zone Shrink-swell	0.00 0.14 0.75	Too clayey Depth to saturated zone	0.13 0.14
171B:						
Catlin	Fair		Poor		Fair	
	Too clayey Water erosion	0.82 0.99	Low strength Depth to saturated zone Shrink-swell	0.00 0.68 0.89	Too clayey Depth to saturated zone	0.64 0.68
171B2:						
Catlin	Fair		Poor		Fair	
	Too clayey Water erosion	0.82 0.99	Low strength Depth to saturated zone Shrink-swell	0.00 0.14 0.89	Too clayey Depth to saturated zone	0.64 0.14
171C2:						
Catlin	Fair		Poor		Fair	
	Too clayey Too acid	0.82 0.95	Low strength Shrink-swell Depth to saturated zone	0.00 0.87 0.95	Too clayey Depth to saturated zone	0.70 0.95
193B2:						
Mayville	Fair		Fair		Fair	
	Low content of organic matter Too clayey Too acid Carbonate content Water erosion	0.02 0.82 0.84 0.88 0.90	Depth to saturated zone	0.99	Too clayey Hard to reclaim Depth to saturated zone	0.51 0.84 0.99
193C2:						
Mayville	Fair		Fair		Fair	
	Low content of organic matter Too clayey Too acid Carbonate content Water erosion	0.02 0.82 0.84 0.88 0.90	Depth to saturated zone	0.53	Hard to reclaim Too clayey Depth to saturated zone	0.46 0.51 0.53

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
198A:						
Elburn-----------	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.99	Depth to saturated zone	0.14	Too clayey	0.81
			Shrink-swell	0.99		
199A:						
Plano------------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.97	Shrink-swell	0.98		
	Too clayey	0.98				
	Water erosion	0.99				
199B:						
Plano------------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.97	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				
199B2:						
Plano------------	Fair		Poor		Fair	
	Water erosion	0.90	Low strength	0.00	Too clayey	0.72
	Too clayey	0.92	Shrink-swell	0.97		
213A:						
Normal-----------	Fair		Poor		Fair	
	Low content of organic matter	0.04	Low strength	0.00	Depth to saturated zone	0.12
	Water erosion	0.37	Depth to saturated zone	0.12		
	Too acid	0.54	Shrink-swell	0.99		
223B2:						
Varna------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Water erosion	0.90	Depth to saturated zone	0.53	Depth to saturated zone	0.53
	Carbonate contente	0.92	Shrink-swell	0.54	Hard to reclaim	0.99
223C2:						
Varna------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Too acid	0.84	Shrink-swell	0.30	Depth to saturated zone	0.53
	Water erosion	0.90	Depth to saturated zone	0.53	Hard to reclaim	0.84
	Carbonate content	0.92				
	Droughty	0.99				
224C2:						
Strawn-----------	Fair		Good		Fair	
	Droughty	0.03			Hard to reclaim	0.10
	Low content of organic matter	0.12				
	Carbonate content	0.97				
	Water erosion	0.99				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
224G:						
Strawn	Fair		Poor		Poor	
	Droughty	0.01	Slope	0.00	Slope	0.00
	Low content of organic matter	0.12			Hard to reclaim	0.05
	Carbonate content	0.97				
	Too acid	0.99				
	Water erosion	0.99				
232A:						
Ashkum	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.18	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.97	Shrink-swell	0.60		
	Water erosion	0.99				
	Too acid	0.99				
233B:						
Birkbeck	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.54
	Water erosion	0.68	Shrink-swell	0.70	Depth to saturated zone	0.89
	Too clayey	0.82	Depth to saturated zone	0.89		
	Too acid	0.84				
	Carbonate content	0.95				
233B2:						
Birkbeck	Fair		Poor		Fair	
	Low content of organic matter	0.40	Low strength	0.00	Too clayey	0.52
	Water erosion	0.68	Depth to saturated zone	0.89	Depth to saturated zone	0.89
	Too clayey	0.82	Shrink-swell	0.94		
	Too acid	0.84				
	Carbonate content	0.92				
233C2:						
Birkbeck	Fair		Poor		Fair	
	Low content of organic matter	0.40	Low strength	0.00	Too clayey	0.52
	Water erosion	0.68	Depth to saturated zone	0.89	Depth to saturated zone	0.89
	Too clayey	0.82	Shrink-swell	0.94		
	Too acid	0.84				
	Carbonate content	0.92				
236A:						
Sabina	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.02
	Too clayey	0.18	Depth to saturated zone	0.02	Too clayey	0.11
	Too acid	0.54	Shrink-swell	0.90		
	Water erosion	0.68				
	Carbonate content	0.92				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
244A:						
Hartsburg--------	Fair		Poor		Poor	
	Low content of organic matter	0.18	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.68	Low strength	0.00	Too clayey	0.82
	Carbonate content	0.68				
	Too clayey	0.82				
272A:						
Edgington--------	Fair		Poor		Poor	
	Too acid	0.54	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00		
279B2:						
Rozetta----------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Water erosion	0.68	Depth to saturated zone	0.62	Depth to saturated zone	0.62
	Too acid	0.88	Shrink-swell	0.93		
	Too clayey	0.98				
290A:						
Warsaw-----------	Fair		Good		Fair	
	Carbonate content	0.92			Hard to reclaim	0.46
	Too acid	0.95				
	Droughty	0.95				
290B2:						
Warsaw-----------	Fair		Good		Fair	
	Droughty	0.68			Hard to reclaim	0.46
	Carbonate content	0.92				
	Too acid	0.95				
293A:						
Andres-----------	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Depth to saturated zone	0.12
	Too clayey	0.82	Depth to saturated zone	0.12	Too clayey	0.64
	Carbonate content	0.84	Shrink-swell	0.96		
	Water erosion	0.99				
294B:						
Symerton---------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.12
	Water erosion	0.90	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Carbonate content	0.97				
318B2:						
Lorenzo----------	Poor		Good		Poor	
	Droughty	0.00			Rock fragments	0.00
	Low content of organic matter	0.32			Too sandy	0.00
					Hard to reclaim	0.00
	Too acid	0.84				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
322B2:						
Russell	Fair		Poor		Fair	
	Low content of organic matter	0.32	Low strength	0.00	Too clayey	0.57
	Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
	Water erosion	0.68				
	Carbonate content	0.92				
	Too clayey	0.92				
322C2:						
Russell	Fair		Poor		Fair	
	Too acid	0.20	Low strength	0.00	Too clayey	0.57
	Low content of organic matter	0.32	Shrink-swell	0.87	Too acid	0.76
	Water erosion	0.68				
	Carbonate content	0.92				
	Too clayey	0.92				
327B2:						
Fox	Fair		Good		Fair	
	Low content of organic matter	0.08			Hard to reclaim	0.68
	Droughty	0.84				
	Water erosion	0.90				
	Too acid	0.99				
327C2:						
Fox	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim	0.68
	Droughty	0.79				
	Too acid	0.84				
	Water erosion	0.90				
	Too clayey	0.98				
330A:						
Peotone	Fair		Poor		Poor	
	Too clayey	0.18	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.18
			Shrink-swell	0.12		
343A:						
Kane	Fair		Fair		Fair	
	Too acid	0.84	Depth to saturated zone	0.02	Depth to saturated zone	0.02
	Droughty	0.89	Shrink-swell	0.99	Hard to reclaim	0.99
	Water erosion	0.90				
481A:						
Raub	Fair		Poor		Fair	
	Carbonate content	0.80	Low strength	0.00	Depth to saturated zone	0.14
	Too acid	0.95	Depth to saturated zone	0.14		
	Water erosion	0.99	Shrink-swell	0.96		

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
496A:						
Fincastle	Fair		Poor		Poor	
	Low content of organic matter	0.32	Low strength	0.00	Depth to saturated zone	0.00
	Too acid	0.54	Depth to saturated zone	0.00	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.98	Too acid	0.98
	Carbonate content	0.92				
	Too clayey	0.92				
533:						
Urban land	Not rated		Not rated		Not rated	
541B2:						
Graymont	Fair		Fair		Fair	
	Carbonate content	0.32	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Low content of organic matter	0.88	Low strength	0.78	Too clayey	0.70
	Water erosion	0.90	Shrink-swell	0.87		
	Too clayey	0.98				
	Too acid	0.99				
567A:						
Elkhart	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Depth to saturated zone	0.62
	Water erosion	0.37	Depth to saturated zone	0.62		
	Carbonate content	0.68				
	Too acid	0.84				
567B:						
Elkhart	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Depth to saturated zone	0.68
	Carbonate content	0.68	Depth to saturated zone	0.68		
	Water erosion	0.90				
567B2:						
Elkhart	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Depth to saturated zone	0.68
	Water erosion	0.37	Depth to saturated zone	0.68		
	Carbonate content	0.68				
	Too acid	0.84				
570D2:						
Martinsville	Fair		Poor		Poor	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
	Too acid	0.84	Shrink-swell	0.94		
	Water erosion	0.99				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
614B:						
Chenoa	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Depth to saturated zone	0.14
	Carbonate content	0.84	Depth to saturated zone	0.14		
	Water erosion	0.99	Shrink-swell	0.87		
614B2:						
Chenoa	Fair		Poor		Poor	
	Too clayey	0.18	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.68	Low strength	0.00	Too clayey	0.15
	Low content of organic matter	0.68	Shrink-swell	0.60		
	Water erosion	0.90				
622B2:						
Wyanet	Fair		Good		Fair	
	Droughty	0.63			Hard to reclaim	0.71
	Carbonate content	0.92				
	Too acid	0.99				
	Water erosion	0.99				
622C2:						
Wyanet	Fair		Good		Fair	
	Droughty	0.69			Hard to reclaim	0.84
	Low content of organic matter	0.88				
	Carbonate content	0.92				
	Too acid	0.99				
	Water erosion	0.99				
663A:						
Clare	Fair		Fair		Fair	
	Low content of organic matter	0.08	Depth to saturated zone	0.89	Too clayey	0.57
	Too clayey	0.92	Shrink-swell	0.99	Depth to saturated zone	0.89
	Too acid	0.99				
	Water erosion	0.99				
667A:						
Kaneville	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.53
	Water erosion	0.68	Depth to saturated zone	0.53	Too clayey	0.54
	Too clayey	0.82				
	Too acid	0.84				
667B:						
Kaneville	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Too clayey	0.55
	Water erosion	0.68	Depth to saturated zone	0.93	Depth to saturated zone	0.93
	Too clayey	0.92	Shrink-swell	0.98		
	Too acid	0.95				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
687B2:						
Penfield	Fair		Good		Good	
	Low content of organic matter	0.32				
	Too acid	0.97				
687C2:						
Penfield	Fair		Poor		Good	
	Low content of organic matter	0.32	Low strength	0.00		
715A:						
Arrowsmith	Fair		Fair		Fair	
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.37	Low strength	0.22	Too clayey	0.72
	Carbonate content	0.68				
	Too clayey	0.92				
721A:						
Drummer	Fair		Poor		Poor	
	Too acid	0.95	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98				
	Water erosion	0.99	Low strength	0.00	Too clayey	0.81
		0.99	Shrink-swell	0.99		
Elpaso	Fair		Poor		Poor	
	Low content of organic matter	0.24	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Carbonate content	0.92	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
802B:						
Orthents, loamy	Fair		Fair		Good	
	Low content of organic matter	0.50	Low strength	0.78		
			Shrink-swell	0.87		
	Water erosion	0.90				
865:						
Pits, gravel	Not rated		Not rated		Not rated	
893B:						
Catlin	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.64
	Water erosion	0.99	Depth to saturated zone	0.68	Depth to saturated zone	0.68
			Shrink-swell	0.89		
Saybrook	Fair		Fair		Fair	
	Low content of organic matter	0.88	Depth to saturated zone	0.80	Too clayey	0.66
					Depth to saturated zone	0.80
	Water erosion	0.90	Shrink-swell	0.95		
	Too clayey	0.92			Hard to reclaim	0.94
	Too acid	0.95				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
902A:						
Ipava	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.32	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Too acid	0.84	Shrink-swell	0.83		
	Water erosion	0.99				
Sable	Fair		Poor		Poor	
	Water erosion	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.92
	Too acid	0.92	Shrink-swell	0.99		
964D:						
Miami	Fair		Fair		Fair	
	Low content of organic matter	0.08	Depth to saturated zone	0.53	Slope	0.04
	Droughty	0.75	Shrink-swell	0.87	Depth to saturated zone	0.53
	Too acid	0.84			Hard to reclaim	0.80
	Water erosion	0.90				
	Carbonate content	0.92				
Hennepin	Poor		Good		Poor	
	Droughty	0.00			Hard to reclaim	0.00
	Low content of organic matter	0.18			Slope	0.04
	Carbonate content	0.68				
	Water erosion	0.90				
964F:						
Miami	Fair		Fair		Poor	
	Low content of organic matter	0.18	Slope	0.02	Slope	0.00
	Droughty	0.64	Depth to saturated zone	0.53	Hard to reclaim	0.35
	Too acid	0.88	Low strength	0.78	Depth to saturated zone	0.53
	Water erosion	0.90	Shrink-swell	0.99		
	Carbonate content	0.92				
Hennepin	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Low content of organic matter	0.18			Hard to reclaim	0.00
	Carbonate content	0.68				
	Water erosion	0.90				
3107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8073A:						
Ross	Good		Good		Good	

Table 16a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
8074A:						
Radford	Fair		Fair		Fair	
	Water erosion	0.68	Depth to saturated zone	0.29	Depth to saturated zone	0.29
	Too acid	0.84	Shrink-swell	0.99		
8077A:						
Huntsville	Fair		Poor		Good	
	Too acid	0.99	Low strength	0.00		
8107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8451A:						
Lawson	Good		Fair		Fair	
			Depth to saturated zone	0.14	Depth to saturated zone	0.14
			Low strength	0.74		
8720A:						
Aetna	Fair		Poor		Poor	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.00
			Depth to saturated zone	0.00		
			Shrink-swell	0.87		
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 16b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the poorer the potential of the layer as a source of gravel or sand. See text for further explanation of ratings in this table.)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
17A:				
Keomah	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
27B2:				
Miami	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
27C2:				
Miami	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
27D2:				
Miami	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
43A:				
Ipava	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
51A:				
Muscatune	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
56B2:				
Dana	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
56C2:				
Dana	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
59A:				
Lisbon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
60B2:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
60C2:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
60D2:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
61A:				
Atterberry	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
67A:				
Harpster	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
68A:				
Sable	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86A:				
Osco	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86B:				
Osco	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86B2:				
Osco	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91B2:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
125A:				
Selma	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
134B2:				
Camden	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
134C2:				
Camden	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel: Rating class	Value	Potential as source of sand: Rating class	Value
145B:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145B2:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145C2:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
146A:				
Elliott	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148B2:				
Proctor	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
148C2:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
149A:				
Brenton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
152A:				
Drummer	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
154A:				
Flanagan	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
171B:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
171B2:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
171C2:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel: Rating class	Value	Potential as source of sand: Rating class	Value
193B2:				
Mayville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
193C2:				
Mayville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
198A:				
Elburn	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
199A:				
Plano	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
199B:				
Plano	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
199B2:				
Plano	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.09
213A:				
Normal	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.12
223B2:				
Varna	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223C2:				
Varna	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224C2:				
Strawn	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224G:				
Strawn	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
232A:				
Ashkum	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel: Rating class	Value	Potential as source of sand: Rating class	Value
233B:				
Birkbeck	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
233B2:				
Birkbeck	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
233C2:				
Birkbeck	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
236A:				
Sabina	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
244A:				
Hartsburg	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
272A:				
Edgington	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
279B2:				
Rozetta	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
290A:				
Warsaw	Fair		Fair	
	Thickest layer	0.03	Thickest layer	0.00
	Bottom layer	0.69	Bottom layer	0.91
290B2:				
Warsaw	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.03
	Bottom layer	0.17	Bottom layer	0.94
293A:				
Andres	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294B:				
Symerton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
318B2:				
Lorenzo	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.99	Bottom layer	0.71

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
322B2:				
Russell----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
322C2:				
Russell----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
327B2:				
Fox--------------	Fair		Fair	
	Thickest layer	0.03	Thickest layer	0.00
	Bottom layer	0.17	Bottom layer	0.84
327C2:				
Fox--------------	Fair		Fair	
	Thickest layer	0.03	Thickest layer	0.00
	Bottom layer	0.17	Bottom layer	0.94
330A:				
Peotone----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
343A:				
Kane-------------	Fair		Fair	
	Thickest layer	0.16	Thickest layer	0.46
	Bottom layer	0.00	Bottom layer	0.34
481A:				
Raub-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
496A:				
Fincastle--------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
533:				
Urban land-------	Not rated		Not rated	
541B2:				
Graymont---------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
567A:				
Elkhart----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
567B:				
Elkhart----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel: Rating class	Value	Potential as source of sand: Rating class	Value
567B2:				
Elkhart	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570D2:				
Martinsville	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
614B:				
Chenoa	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
614B2:				
Chenoa	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
622B2:				
Wyanet	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
622C2:				
Wyanet	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
663A:				
Clare	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
667A:				
Kaneville	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
667B:				
Kaneville	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02
687B2:				
Penfield	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.03
687C2:				
Penfield	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.15
715A:				
Arrowsmith	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
721A:				
Drummer	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
Elpaso	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
802B:				
Orthents, loamy	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
865:				
Pits, gravel	Not rated		Not rated	
893B:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
902A:				
Ipava	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Sable	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
964D:				
Miami	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Hennepin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
964F:				
Miami	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.10
Hennepin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 16b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
8073A:				
Ross	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8074A:				
Radford	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8077A:				
Huntsville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8451A:				
Lawson	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8720A:				
Aetna	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
MW:				
Miscellaneous water	Not rated		Not rated	
W:				
Water	Not rated		Not rated	

Table 17a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah----------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.23		
27B2:						
Miami-----------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.77		
			Piping	0.41		
27C2:						
Miami-----------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.68		
			Thin layer	0.66		
27D2:						
Miami-----------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
	Slope	0.02				
			Thin layer	0.77		
			Piping	0.36		
43A:						
Ipava-----------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.01		
51A:						
Muscatune-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.08		
56B2:						
Dana------------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.04		
			Piping	0.01		
56C2:						
Dana------------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.19		
			Piping	0.01		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59A:						
Lisbon	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.81		
			Piping	0.10		
60B2:						
La Rose	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Thin layer	1.00	Deep to water	1.00
			Piping	0.95		
60C2:						
La Rose	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Thin layer	1.00	Deep to water	1.00
			Piping	0.50		
60D2:						
La Rose	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Thin layer	1.00	Deep to water	1.00
			Piping	0.50		
61A:						
Atterberry	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.01		
67A:						
Harpster	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.23		
68A:						
Sable	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.34		
86A:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Piping	0.31	Deep to water	0.81
					Slow refill	0.28
					Cutbanks cave	0.10
86B:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Deep to water	1.00
86B2:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.98	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.15	Deep to water	0.01

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
91B2:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.16		
125A:						
Selma	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	1.00		
			Seepage	0.10		
134B2:						
Camden	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.37	Deep to water	1.00
			Seepage	0.04		
134C2:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Deep to water	1.00
			Seepage	0.10		
145B:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Deep to water	1.00
			Thin layer	0.66		
			Piping	0.12		
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Deep to water	1.00
			Thin layer	0.83		
			Piping	0.05		
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Deep to water	1.00
			Thin layer	0.66		
			Piping	0.07		
146A:						
Elliott	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.78		
			Piping	0.09		
148B2:						
Proctor	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.50	Deep to water	1.00
			Seepage	0.04		
148C2:						
Proctor	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.59	Deep to water	1.00

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149A:						
Brenton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	0.50
					Slow refill	0.28
			Piping	0.97		
152A:						
Drummer	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.49		
			Seepage	0.03		
154A:						
Flanagan	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.13		
			Piping	0.03		
171B:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.98	Deep to water	1.00
			Thin layer	0.26		
			Piping	0.02		
171B2:						
Catlin	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.20		
			Thin layer	0.19		
171C2:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Deep to water	1.00
			Piping	0.03		
			Thin layer	0.02		
193B2:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.74	Deep to water	1.00
			Depth to saturated zone	0.62		
			Piping	0.02		
193C2:						
Mayville	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.74		
			Piping	0.17		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
198A:						
Elburn	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.35		
			Seepage	0.10		
199A:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.59	Deep to water	1.00
199B:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.76	Deep to water	1.00
			Seepage	0.10		
199B2:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.22	Deep to water	1.00
			Seepage	0.09		
213A:						
Normal	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.71		
			Seepage	0.12		
223B2:						
Varna	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.52		
			Piping	0.24		
223C2:						
Varna	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.74		
			Piping	0.14		
224C2:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.98	Deep to water	1.00
			Piping	0.78		
224G:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Thin layer	0.99	Deep to water	1.00
	Seepage	0.72	Piping	0.50		
232A:						
Ashkum	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233B:						
Birkbeck------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Deep to water	1.00
			Thin layer	0.02		
233B2:						
Birkbeck------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Deep to water	1.00
			Thin layer	0.02		
			Piping	0.02		
233C2:						
Birkbeck------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.99	Deep to water	1.00
			Piping	0.06		
			Thin layer	0.01		
236A:						
Sabina--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.08		
			Piping	0.02		
244A:						
Hartsburg-----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.37		
272A:						
Edgington-----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.46		
279B2:						
Rozetta-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.99	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.04	Deep to water	0.01
290A:						
Warsaw--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.99	Deep to water	1.00
			Piping	0.80		
			Thin layer	0.70		
290B2:						
Warsaw--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.97	Deep to water	1.00
			Thin layer	0.70		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
293A:						
Andres	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.65		
294B:						
Symerton	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.83	Deep to water	1.00
			Depth to saturated zone	0.53		
318B2:						
Lorenzo	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.99	Deep to water	1.00
			Seepage	0.90		
			Piping	0.77		
322B2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.22	Deep to water	1.00
			Piping	0.08		
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Deep to water	1.00
			Thin layer	0.01		
327B2:						
Fox	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.84	Deep to water	1.00
			Piping	0.72		
			Thin layer	0.61		
327C2:						
Fox	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.97	Deep to water	1.00
			Thin layer	0.70		
			Piping	0.66		
330A:						
Peotone	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
343A:						
Kane	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.94		
			Thin layer	0.70		
			Seepage	0.26		
481A:						
Raub	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.24		
			Thin layer	0.11		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
496A:						
Fincastle	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.51		
533:						
Urban land	Not rated		Not rated		Not rated	
541B2:						
Graymont	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Thin layer	0.52		
			Piping	0.01		
567A:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.99	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.62	Deep to water	0.01
567B:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.98	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.71	Deep to water	0.01
567B2:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.98	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.52	Deep to water	0.01
570D2:						
Martinsville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.73	Deep to water	1.00
	Slope	0.03	Seepage	0.03		
614B:						
Chenoa	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.13		
614B2:						
Chenoa	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.04		
			Thin layer	0.01		
622B2:						
Wyanet	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.81	Deep to water	1.00
			Piping	0.72		
622C2:						
Wyanet	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.74	Deep to water	1.00
			Piping	0.73		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
663A:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.86	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.74	Deep to water	0.06
667A:						
Kaneville	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.33	Deep to water	0.01
			Seepage	0.03		
667B:						
Kaneville	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.80	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.17	Deep to water	0.09
			Seepage	0.02		
687B2:						
Penfield	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.03	Deep to water	0.64
					Slow refill	0.28
			Seepage	0.03	Cutbanks cave	0.10
687C2:						
Penfield	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.99	Deep to water	1.00
			Seepage	0.15		
715A:						
Arrowsmith	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	0.50
					Slow refill	0.28
			Piping	0.73		
721A:						
Drummer	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.49		
			Seepage	0.03		
Elpaso	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.17		
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.47	Piping	0.50	Deep to water	0.90
					Slow refill	0.53
					Cutbanks cave	0.10
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
893B:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.98	Deep to water	1.00
			Thin layer	0.26		
			Piping	0.02		
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Deep to water	1.00
			Thin layer	0.66		
			Piping	0.12		
902A:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.01		
Sable	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.21		
964D:						
Miami	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
	Slope	0.02				
			Thin layer	0.77		
			Piping	0.36		
Hennepin	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Thin layer	1.00	Deep to water	1.00
	Slope	0.02	Piping	0.80		
964F:						
Miami	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
	Slope	0.24				
			Piping	0.99		
			Thin layer	0.66		
			Seepage	0.10		
Hennepin	Somewhat limited		Very limited		Very limited	
	Slope	0.34	Thin layer	1.00	Deep to water	1.00
	Seepage	0.04	Piping	0.98		
3107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.02		
8073A:						
Ross	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Deep to water	1.00

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A:						
Radford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.40		
8077A:						
Huntsville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.93	Deep to water	1.00
8107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.03		
8451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	1.00		
8720A:						
Aetna	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.02		
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 17b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
17A:						
Keomah	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
27B2:						
Miami	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
27C2:						
Miami	Somewhat limited		Very limited		Somewhat Limited	
	Slope	0.99	Water erosion	1.00	Cutbanks caves	0.10
			Depth to saturated zone	1.00		
			Slope	0.99		
27D2:						
Miami	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
43A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
51A:						
Muscatune	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
56B2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.36		
56C2:						
Dana	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.99		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
59A:						
Lisbon	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
60B2:						
La Rose	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Water erosion	1.00		
			Slope	0.36		
60C2:						
La Rose	Somewhat limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
60D2:						
La Rose	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
61A:						
Atterberry	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
67A:						
Harpster	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
68A:						
Sable	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
86A:						
Osco	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
86B:						
Osco	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Cutbanks cave	0.10
			Slope	0.25		
86B2:						
Osco	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
91B2:						
Swygert	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Water erosion	0.89		
			Slope	0.16		
125A:						
Selma	Not limited		Very limited		Very limited	
			Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Water erosion	0.89		
134B2:						
Camden	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.04	Water erosion	1.00		
			Slope	0.04		
134C2:						
Camden	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
145B:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
145B2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.36		
145C2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.95	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.95		
146A:						
Elliott	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Dense layer	0.50
			Depth to saturated zone	1.00	Cutbanks cave	0.10
148B2:						
Proctor	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Water erosion	0.89		
			Slope	0.25		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
148C2:						
Proctor-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Slope	0.99		
149A:						
Brenton-------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Water erosion	0.56		
152A:						
Drummer-------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
154A:						
Flanagan------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
171B:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
171B2:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Water erosion	0.89		
			Slope	0.16		
171C2:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.95	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.95		
			Water erosion	0.89		
193B2:						
Mayville------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
193C2:						
Mayville------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.83	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.83		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
198A:						
Elburn	Not limited		Very limited		Very limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
199A:						
Plano	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
199B:						
Plano	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
199B2:						
Plano	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
			Slope	0.25		
213A:						
Normal	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
223B2:						
Varna	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Depth to saturated zone	1.00	Desne layer	0.50
					Cutbanks cave	0.10
			Water erosion	0.89		
			Slope	0.16		
223C2:						
Varna	Somewhat limited		Very limited		Very limited	
	Slope	0.62	Depth to saturated zone	1.00	Dense layer	0.50
					Cutbanks cave	0.10
			Water erosion	0.89		
			Slope	0.62		
224C2:						
Strawn	Somewhat limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
224G:						
Strawn	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
232A:						
Ashkum	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Water erosion	0.89		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
233B:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.25		
233B2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.04		
233C2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	1.00		
236A:						
Sabina	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
244A:						
Hartsburg	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
272A:						
Edgington	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Water erosion	0.89		
279B2:						
Rozetta	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
290A:						
Warsaw	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
			Water erosion	0.56		
290B2:						
Warsaw	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Too sandy	1.00		
			Water erosion	0.56		
			Slope	0.25		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
293A:						
Andres	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Water erosion	0.89		
294B:						
Symerton	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Water erosion	0.56		
			Slope	0.25		
318B2:						
Lorenzo	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Water erosion	0.56		
	Content of large stones	0.03	Slope	0.25		
			Content of large stones	0.03		
322B2:						
Russell	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.16	Water erosion	1.00		
			Slope	0.16		
322C2:						
Russell	Somewhat limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
327B2:						
Fox	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.04	Water erosion	1.00		
			Too sandy	1.00		
			Slope	0.04		
327C2:						
Fox	Somewhat limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Too sandy	1.00		
			Slope	1.00		
330A:						
Peotone	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Water erosion	0.17		
343A:						
Kane	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
481A:						
Raub----------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
496A:						
Fincastle-----------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
533:						
Urban land----------	Not rated		Not rated		Not rated	
541B2:						
Graymont------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
567A:						
Elkhart-------------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
567B:						
Elkhart-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
567B2:						
Elkhart-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.04		
570D2:						
Martinsville--------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
614B:						
Chenoa--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.25		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
614B2:						
Chenoa	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.25		
622B2:						
Wyanet	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Water erosion	0.89		
			Slope	0.25		
622C2:						
Wyanet	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.99	Slope	0.99		
			Water erosion	0.89		
663A:						
Clare	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
667A:						
Kaneville	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
667B:						
Kaneville	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
687B2:						
Penfield	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.25	Water erosion	0.56	Cutbanks cave	0.10
			Slope	0.25		
687C2:						
Penfield	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.95	Slope	0.95		
			Water erosion	0.56		
715A:						
Arrowsmith	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
721A:						
Drummer	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
Elpaso	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
802B:						
Orthents, loamy	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Cutbanks cave	0.50
			Slope	0.36		
865:						
Pits, gravel	Not rated		Not rated		Not rated	
893B:						
Catlin	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.16		
902A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
Sable	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
964D:						
Miami	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
964D:						
Hennepin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
964F:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
			Water erosion	0.89		
Hennepin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
3107A:						
Sawmill	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Flooding	1.00
					Cutbanks cave	0.10
			Water erosion	0.56		
8073A:						
Ross	Not limited		Somewhat limited		Drainage not needed	
			Water erosion	0.56		
8074A:						
Radford	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Flooding	0.60
			Depth to saturated zone	1.00	Cutbanks cave	0.10
8077A:						
Huntsville	Not limited		Somewhat limited		Somewhat limited	
			Water erosion	0.56	Flooding	0.60
					Cutbanks cave	0.10
8107A:						
Sawmill	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Flooding	0.60
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Water erosion	0.56		
8451A:						
Lawson	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Flooding	0.60
					Cutbanks cave	0.10
			Water erosion	0.89		

Table 17b.--Water Management--Continued

Map symbol and soil name	Grassed waterways and surface drains: Rating class and limiting features	Value	Terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
8720A:						
Aetna	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Flooding	0.60
			Depth to saturated zone	1.00	Cutbanks cave	0.10
MW:						
Miscellaneous water	Not rated		Not rated		Not rated	
W:						
Water	Not rated		Not rated		Not rated	

Table 18.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
17A:												
Keomah	0-11	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-15
	11-18	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	10-20
	18-33	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	100	95-100	45-55	25-30
	33-51	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	51-89	Silt loam	ML, CL-ML, CL	A-6, A-4	0	0	100	100	100	95-100	25-35	5-15
27B2:												
Miami	0-9	Silt loam	CL, ML	A-6	0	0	95-100	90-100	90-98	80-90	29-37	10-16
	9-21	Silty clay loam, silt loam	CL, ML	A-6	0	0	95-100	90-100	85-95	75-90	33-39	13-18
	21-33	Clay loam	CL, ML	A-6	0	0-3	90-98	85-98	75-95	55-85	33-39	12-18
	33-60	Loam, clay loam	CL-ML, CL, ML, SC, SC-SM	A-4	0-1	0-3	90-98	85-98	75-95	45-75	22-28	4-10
27C2:												
Miami	0-7	Silt loam	CL, ML	A-6	0	0	95-100	95-100	90-98	80-90	29-37	10-16
	7-11	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	85-95	75-90	33-39	13-18
	11-23	Clay loam	CL, ML	A-6	0	0	90-100	85-99	75-95	55-85	33-39	12-18
	23-36	Loam	CL, ML, SC	A-6, A-4	0	0-2	90-100	85-99	70-90	45-75	25-33	8-14
	36-60	Loam	CL-ML, CL, ML, SC, SC-SM	A-4	0	0-3	90-100	85-99	70-90	45-75	22-28	4-10
27D2:												
Miami	0-4	Silt loam	CL, ML	A-6	0	0	95-100	95-100	90-98	80-90	29-37	10-16
	4-12	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	85-95	75-90	33-39	13-18
	12-28	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	28-33	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	33-60	Loam	CL-ML, ML, CL, SC, SC-SM	A-4	0	0-3	90-100	85-98	75-95	45-75	22-28	4-10
43A:												
Ipava	0-10	Silt loam	CL	A-4	0	0	100	100	97-100	95-100	24-37	4-14
	10-18	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	40-46	15-20
	18-31	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	97-100	95-100	45-57	22-32
	31-50	Silty clay loam	CL	A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	50-60	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	96-100	93-100	24-37	7-18
51A:												
Muscatune	0-16	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	16-22	Silty clay loam, silt loam	ML, CL	A-6	0	0	100	100	97-100	95-100	35-40	14-20
	22-46	Silty clay loam	ML, CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
56B2:												
Dana---------	0-7	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	7-34	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	34-53	Clay loam	CL, ML	A-6	0	0	95-100	85-98	70-95	50-80	33-39	13-18
	53-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
56C2:												
Dana---------	0-8	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	18-22
	8-32	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-47	Clay loam	CL, ML	A-6	0	0	95-100	80-100	70-95	50-80	33-39	13-18
	47-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
59A:												
Lisbon-------	0-11	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	4-14
	11-14	Silty clay loam, silt loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-20
	14-25	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	25-32	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	32-60	Loam	CL, ML, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
60B2:												
La Rose------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	29-33	8-11
	7-15	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	15-60	Loam	CL-ML, ML, CL, SC-SM, SC	A-4	0-1	0-3	90-100	85-100	70-95	45-75	22-28	4-10
60C2:												
La Rose------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	29-33	8-11
	7-19	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	19-60	Loam	CL-ML, ML, CL, SC-SM, SC	A-4	0-1	0-3	90-100	85-100	70-95	45-75	22-28	4-10
60D2:												
La Rose------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	29-33	8-11
	7-12	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	12-60	Loam	CL-ML, ML, CL, SC-SM, SC	A-4	0-1	0-3	90-100	85-100	70-95	45-75	22-28	4-10
61A:												
Atterberry---	0-9	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-16
	9-17	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
	17-48	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam	ML, CL	A-6, A-4	0	0	100	100	95-100	95-100	24-37	7-18

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
67A:												
Harpster-----	0-18	Silty clay loam	ML, CL	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	18-41	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	41-56	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	56-60	Loam, silt loam	ML, SC-SM, CL, CL-ML, SC	A-4, A-6	0	0	100	95-100	70-90	45-70	22-33	4-14
68A:												
Sable--------	0-23	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	23-38	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	38-47	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	47-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
86A:												
Osco---------	0-13	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	13-38	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	38-44	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	44-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
86B:												
Osco---------	0-14	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	10-20
	14-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	10-25
86B2:												
Osco---------	0-8	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	8-42	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	42-51	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	51-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
91B2:												
Swygert------	0-7	Silty clay loam	CL, ML	A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	7-30	Silty clay	CL, MH, CH	A-7-6, A-7-5	0	0	100	100	95-100	85-100	42-53	18-30
	30-48	Silty clay	CL, CH, MH	A-7-6, A-7-5	0	0	97-100	90-100	85-100	75-100	42-53	18-30
	48-60	Silty clay	CL, CH, MH	A-7-6, A-7-5	0	0	95-100	85-100	80-100	70-100	42-53	18-30
125A:												
Selma--------	0-23	Loam	ML, CL-ML, SM	A-4	0	0	90-100	80-100	70-90	45-70	22-33	NP-8
	23-28	Loam, clay loam	CL, ML, SC	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	28-41	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	22-33	4-13
	41-53	Sandy loam	SC-SM, SM, SC	A-2-4, A-4, A-1-b	0	0	90-100	75-100	45-85	20-50	19-28	1-9
	53-60	Stratified loamy sand to sandy loam	SM, SC-SM	A-2-4, A-4, A-1-b	0	0	90-100	75-100	35-85	15-40	19-25	1-7

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
134B2:												
Camden-------	0-8	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	24-37	6-15
	8-31	Silty clay loam, silt loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	31-41	Loam	CL, ML, SC	A-6, A-4	0	0	95-100	90-100	70-90	45-70	25-33	8-14
	41-50	Clay loam	CL, ML	A-6	0	0	95-100	90-100	75-95	55-85	33-39	12-18
	50-60	Stratified sandy clay loam to sandy loam	SC, CL-ML, CL, SC-SM, SM	A-6, A-4, A-2-4, A-2-6	0	0	95-100	90-100	65-95	20-60	25-32	6-15
134C2:												
Camden-------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	ML, SC, SM, CL	A-2, A-4, A-6	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	ML, SC, SM, CL	A-2, A-4	0	0	90-100	80-100	35-60	15-40	19-25	1-7
145B:												
Saybrook-----	0-15	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	15-32	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-36	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam	CL, ML, SC	A-6, A-4	0-1	0-3	85-100	80-95	70-90	45-70	27-33	8-14
145B2:												
Saybrook-----	0-8	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	8-28	Silt loam, silty clay loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	97-100	95-100	85-100	35-46	14-24
	28-31	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	31-60	Loam	CL, ML, SC	A-6, A-4	0-1	0-3	85-100	80-95	70-90	45-70	27-33	8-14
145C2:												
Saybrook-----	0-9	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	9-30	Silt loam, silty clay loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	97-100	95-100	85-100	35-46	14-24
	30-36	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam	CL, ML, SC	A-6, A-4	0-1	0-3	85-100	80-95	70-90	45-70	27-33	8-14
146A:												
Elliott------	0-6	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	6-11	Silty clay loam	ML, CL	A-7-5, A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	11-16	Silty clay	CL, CH, MH	A-7-5, A-7-6	0	0	100	95-100	90-100	85-100	42-56	18-30
	16-41	Silty clay loam	ML, CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	41-60	Silty clay loam	ML, CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
148B2:												
Proctor------	0-13	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	13-32	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-49	Stratified loam to clay loam	CL, ML	A-6, A-4	0	0	95-100	90-100	75-90	55-70	25-33	8-14
	49-60	Stratified sandy clay loam to loam to loamy sand	SC, SM, CL-ML, CL, SC-SM	A-6, A-4, A-2-6, A-2-4	0	0	95-100	80-100	50-90	25-65	25-32	6-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
148C2:												
Proctor------	0-13	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	13-36	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	36-46	Stratified clay loam to silt loam, loam	CL, ML	A-6, A-4	0	0	95-100	85-100	75-100	60-85	29-35	8-19
	46-60	Stratified silt to sandy loam, loam, sandy loam, silt loam	CL-ML, CL, ML	A-4	0	0	100	95-100	80-100	50-75	13-23	NP-8
149A:												
Brenton------	0-14	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	25-35	5-15
	14-33	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	35-45	15-24
	33-45	Stratified loam to fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	90-100	75-90	50-70	20-30	NP-10
	45-54	Loam	CL, ML	A-6, A-4	0	0	95-100	90-100	75-90	55-70	25-35	8-15
	54-80	Silt loam, silt	CL, CL-ML, ML	A-4, A-6	0	0-3	100	95-100	85-100	75-100	20-30	5-12
152A:												
Drummer------	0-14	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	14-41	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-24
	41-47	Loam	CL, ML, SC	A-6, A-4	0	0	95-100	90-100	70-90	45-80	25-33	8-14
	47-60	Stratified loam to sandy loam	SC, CL, SM, CL-ML, SC-SM	A-4, A-2-4	0	0	95-100	80-100	55-95	30-65	22-28	4-10
154A:												
Flanagan-----	0-18	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	24-37	4-14
	18-38	Silty clay loam, silty clay	CL, CH, MH	A-7-6	0	0	100	100	95-100	95-100	45-52	22-28
	38-45	Silty clay loam, silt loam	CL, ML	A-6	0	0	100	100	95-100	95-100	35-40	14-20
	45-49	Silt loam, loam	CL, ML	A-6, A-4	0	0-3	85-100	80-100	75-90	60-90	25-33	9-13
	49-60	Loam	CL, CL-ML, ML, SC-SM, SC	A-4, A-6	0-1	0-5	85-100	80-100	70-90	45-70	22-33	4-14
171B:												
Catlin-------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	11-16	Silty clay loam	CL, ML	A-7-6	0	0	100	100	97-100	95-100	40-46	16-21
	16-41	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	85-100	37-46	16-24
	41-45	Clay loam	CL, ML	A-6	0	0	90-98	85-98	76-95	54-83	33-39	12-18
	45-60	Loam	CL, CL-ML, SC-SM, SC, ML	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	22-33	4-14
171B2:												
Catlin-------	0-8	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	8-34	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	34-43	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	43-60	Loam	CL, CL-ML, SC-SM, SC, ML	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	22-33	4-14

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
171C2:												
Catlin-------	0-9	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	9-40	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	40-50	Silt loam, silty clay loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	35-40	14-20
	50-55	Clay loam	CL, ML	A-6	0	0	90-98	85-98	76-95	55-85	33-39	12-18
	55-60	Clay loam	CL, ML	A-6	0-1	0-2	90-98	80-95	70-90	50-80	33-39	13-18
193B2:												
Mayville-----	0-6	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	11-18
	6-8	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	96-100	93-100	24-37	7-18
	8-27	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	27-34	Clay loam	CL, ML	A-6	0	0	90-98	85-98	76-95	54-83	33-39	12-18
	34-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
193C2:												
Mayville-----	0-6	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	11-18
	6-24	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	24-29	Clay loam	CL, ML	A-6	0	0	90-98	85-98	76-95	54-83	33-39	12-18
	29-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
198A:												
Elburn-------	0-16	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL, SC-SM, ML	A-4, A-6	0	0	95-100	95-100	85-100	55-75	20-30	5-15
	58-62	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	50-85	20-45	19-25	1-7
199A:												
Plano--------	0-14	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	14-49	Silty clay loam, silt loam	CL, ML	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	60-72	Stratified loamy sand to silt loam	CL, SC, SM, ML, SC-SM, CL-ML	A-2-4, A-4	0	0-5	90-100	70-95	60-90	35-65	20-25	NP-10
199B:												
Plano--------	0-15	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	15-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	45-55	Clay loam, loam, sandy loam	SM, CL, ML, SC	A-4, A-6	0	0-1	90-100	85-95	60-90	40-65	30-45	10-25
	55-72	Stratified silt loam to loamy sand	ML, SC, SM, SC-SM, CL, CL-ML	A-2-4, A-4	0	0-5	90-100	70-95	60-90	35-65	20-25	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
199B2:												
Plano--------	0-9	Silt loam	ML, CL	A-6	0	0	100	100	97-100	95-100	29-37	10-16
	9-46	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-53	Loam	CL, ML, SC-SM, SC	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	53-60	Sandy loam	SM, SC-SM	A-2-4, A-1-b, A-4	0	0	90-100	75-100	45-85	20-50	19-28	1-9
213A:												
Normal-------	0-11	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	6-15
	11-20	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	20-37	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	37-52	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	52-75	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	75-80	Gravelly sandy loam	SC, SC-SM, SM	A-2-4, A-1-b	0	0	60-100	55-75	35-65	15-35	22-28	4-10
223B2:												
Varna--------	0-12	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	10-16
	12-27	Silty clay, silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	95-100	90-100	85-100	38-46	15-22
	27-39	Silty clay loam	CL, ML	A-6	0	0	95-100	85-97	80-95	70-95	33-39	12-17
	39-60	Silty clay loam	CL, ML	A-6	0-1	0-3	95-100	85-97	80-95	70-95	33-39	12-17
223C2:												
Varna--------	0-8	Silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	95-100	90-100	85-100	37-46	15-22
	8-27	Silty clay, silty clay loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	95-100	90-100	85-100	38-46	15-22
	27-34	Silty clay loam	CL, ML	A-6	0	0	95-100	85-97	80-95	70-95	33-39	12-17
	34-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-97	80-95	70-95	33-39	12-17
224C2:												
Strawn-------	0-4	Loam	CL, ML, CL-ML	A-6, A-4	0	0-1	98-100	95-100	80-100	50-85	22-37	6-16
	4-18	Clay loam	CL, ML	A-6	0	0-1	90-100	85-95	76-90	54-83	33-39	12-18
	18-24	Loam	CL, ML, SC	A-6, A-4	0	0-2	85-100	80-95	70-90	45-70	25-33	8-14
	24-60	Loam	CL, SC, SC-SM, CL-ML, ML	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
224G:												
Strawn-------	0-2	Loam	CL, ML, CL-ML	A-6, A-4	0	0-1	98-100	95-100	80-100	50-85	22-37	6-16
	2-5	Loam	CL, ML, CL-ML	A-4, A-6	0	0-1	98-100	95-100	80-100	50-85	21-33	3-13
	5-23	Clay loam	CL, ML	A-6	0	0-1	90-100	85-95	76-90	54-83	33-39	12-18
	23-60	Loam	CL, SC, SC-SM, CL-ML, ML	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
232A:												
Ashkum-------	0-12	Silty clay loam	CL, CH, MH	A-7-6	0	0	100	100	95-100	85-100	45-52	22-28
	12-29	Silty clay loam, silty clay	CL, CH, MH	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	45-57	22-32
	29-54	Silty clay loam	CL, ML	A-6	0	0-1	95-100	85-98	80-95	70-95	33-45	12-22
	54-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
233B:												
Birkbeck	0-4	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	4-9	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	9-54	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	54-60	Loam	CL, SC, ML	A-6, A-4	0	0-1	85-100	85-100	70-90	45-70	25-33	8-14
	60-68	Loam	CL, SC-SM, SC, ML, CL-ML	A-4, A-6	0-1	0-3	85-100	85-100	70-90	45-70	22-33	4-14
233B2:												
Birkbeck	0-9	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	9-48	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	48-55	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	55-60	Loam	CL, ML, SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-90	45-70	22-33	4-14
233C2:												
Birkbeck	0-7	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	7-46	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	46-57	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	57-60	Loam	CL, ML, SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-90	45-70	22-33	4-14
236A:												
Sabina	0-7	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	6-15
	7-18	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	18-30	Silty clay loam	CL, CH, MH	A-7-6	0	0	100	100	97-100	95-100	45-52	23-29
	30-45	Silt loam, silty clay loam, silty clay loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	35-45	16-25
	45-51	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	51-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
244A:												
Hartsburg	0-17	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	17-34	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	34-60	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
272A:												
Edgington	0-20	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	3-13
	20-31	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	31-55	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	55-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
279B2:												
Rozetta	0-6	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	30-35	10-20
	6-53	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	35-45	15-25
	53-60	Silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	25-35	5-15

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
290A:												
Warsaw-------	0-14	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	70-95	50-75	23-37	8-18
	14-26	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	26-35	Gravelly clay loam	SC, SM, CL	A-6, A-7-6	0	0-5	70-85	50-75	40-75	35-65	33-42	12-20
	35-60	Very gravelly sand	SW, GW, SP	A-1-a	0-2	0-5	50-60	30-50	15-30	1-5	17-19	NP-2
290B2:												
Warsaw-------	0-9	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	70-95	50-75	25-35	8-20
	9-28	Sandy clay loam	SC, CL, SM	A-6, A-4	0	0	97-100	95-100	60-95	35-65	30-40	8-15
	28-35	Gravelly sandy loam	SC-SM, SM, SP-SC, SC, SP-SM	A-2-4, A-1-b, A-4	0-1	0-3	85-95	55-75	35-65	10-45	20-30	NP-10
	35-60	Gravelly coarse sand	SW-SM, SP-SM	A-1-b	0-2	0-5	70-90	50-75	15-35	5-10	15-20	NP
293A:												
Andres-------	0-11	Silt loam	ML, CL	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	11-26	Clay loam, sandy clay loam, loam	ML, CL	A-6	0	0-1	95-100	85-100	75-95	50-80	31-39	11-18
	26-50	Silty clay loam	ML, CL	A-6	0	0-1	95-100	85-100	80-95	70-95	33-39	12-17
	50-60	Silty clay loam, silt loam	ML, CL	A-6	0	0-3	95-100	85-100	80-95	70-95	30-39	10-17
294B:												
Symerton-----	0-15	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	15-19	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	19-35	Gravelly clay loam, loam, clay loam, gravelly loam	CL, SC-SM, SM, SC	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	35-39	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	39-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
318B2:												
Lorenzo------	0-7	Silt loam	CL, ML	A-4, A-6	0	0-1	90-100	85-100	80-90	65-85	29-33	8-11
	7-14	Clay loam	CL, ML	A-6	0	0-1	90-98	80-98	75-95	55-85	33-39	12-18
	14-22	Sandy clay loam	SC, SM, CL	A-6, A-4, A-2-6, A-2-4	0	0-2	85-98	80-95	60-85	30-60	29-39	9-16
	22-60	Very gravelly sand	SP-SM, SP	A-1-a, A-1-b	0-10	5-15	60-75	35-50	15-45	0-10	16-22	NP-3
322B2:												
Russell------	0-6	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	11-18
	6-30	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	30-46	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	46-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-100	70-90	45-70	22-33	4-14

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
322C2:												
Russell------	0-7	Silt loam	CL, ML	A-6	0	0	100	97-100	95-100	85-100	29-37	11-18
	7-27	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	27-56	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	56-72	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-100	70-90	45-70	22-33	4-14
327B2:												
Fox----------	0-6	Silt loam	CL, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	29-33	7-13
	6-10	Silt loam	CL, ML	A-6, A-4	0	0	90-100	80-100	80-90	65-85	25-33	8-14
	10-21	Silty clay loam	CL, ML	A-6	0	0	90-100	80-100	75-95	65-90	33-39	13-18
	21-37	Sandy clay loam, clay loam	SC, SM, CL	A-6, A-4, A-2-6, A-2-4	0	0	90-100	80-100	60-85	30-60	29-39	9-16
	37-60	Stratified very gravelly sand to sand	SM, SP-SM	A-1-b, A-2-4	0-1	0-3	85-95	50-75	35-55	5-20	17-19	NP-2
327C2:												
Fox----------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	29-33	7-13
	8-22	Silty clay loam	CL, ML	A-6	0	0	90-100	80-100	75-95	65-90	33-39	13-18
	22-28	Sandy clay loam	SC, CL, SM	A-6, A-4, A-2-6, A-2-4	0	0	85-100	80-95	60-85	30-60	29-39	9-16
	28-35	Gravelly sandy clay loam	SC, SM	A-2-6, A-2-4, A-6	0	0-1	70-85	50-75	35-65	25-45	28-38	10-16
	35-60	Stratified gravelly coarse sand to loamy sand	SW-SM, SP-SM	A-1-b	0-1	0-5	70-80	50-75	15-35	5-10	17-19	NP-2
330A:												
Peotone------	0-28	Silty clay loam	CL, MH, CH	A-7-6	0	0	100	100	97-100	95-100	45-52	22-28
	28-44	Silty clay loam, silty clay	CL, CH, MH	A-7-6	0	0	100	97-100	95-100	85-100	46-53	25-34
	44-60	Silty clay loam	CL, CH, MH	A-7-6, A-7-5, A-6	0	0	100	97-100	95-100	85-100	37-52	16-28
343A:												
Kane---------	0-14	Silt loam	ML, CL-ML	A-4	0	0	96-100	90-100	80-90	65-85	25-35	3-9
	14-17	Loam	CL, SC, ML	A-6, A-4	0	0	97-100	90-100	70-90	45-70	25-35	8-14
	17-24	Clay loam	CL, ML	A-6	0	0	98-100	90-98	70-95	50-80	35-40	12-18
	24-35	Sandy clay loam	SC, CL, SM	A-4, A-2-4, A-2-6, A-6	0	0	90-100	80-92	60-85	30-60	30-40	8-15
	35-68	Gravelly loamy sand	SM, SP-SM	A-2-4, A-1-b	0	0-5	65-90	50-80	30-65	5-20	17-20	NP-2
	68-80	Loamy sand	SM, SP-SM, SC-SM	A-2-4	0	0	85-95	80-95	50-75	5-30	16-20	NP-5
481A:												
Raub---------	0-18	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	4-14
	18-32	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-50	Clay loam, loam	ML, CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	50-60	Loam, clay loam	CL-ML, CL, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
496A:												
Fincastle----	0-10	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	6-15
	10-14	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	14-35	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	16-25
	35-43	Clay loam	CL, ML	A-6	0	0	90-100	80-100	70-95	50-80	33-39	12-18
	43-49	Clay loam	CL, ML	A-6, A-4	0	0	90-100	80-100	70-95	50-80	27-34	8-14
	49-60	Loam	CL-ML, SC-SM, SC, ML, CL	A-4	0-1	0-3	85-100	80-95	70-90	45-70	22-28	4-10
533:												
Urban land.												
541B2:												
Graymont-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	97-100	95-100	90-98	25-40	5-15
	8-27	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	90-98	35-45	15-25
	27-39	Silty clay loam	CL, ML	A-6	0	0	90-100	80-100	70-100	60-95	30-40	10-20
	39-60	Silt loam	CL, ML	A-6, A-4	0	0-3	90-100	80-100	70-100	60-95	20-35	7-15
567A:												
Elkhart------	0-14	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	14-30	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	30-35	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	35-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
567B:												
Elkhart------	0-10	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	10-26	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	26-77	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	77-84	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
567B2:												
Elkhart------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	8-26	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	26-30	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	30-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
570D2:												
Martinsville	0-6	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	90-100	75-95	60-85	24-37	6-16
	6-10	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	75-95	60-85	27-33	7-13
	10-18	Clay loam, loam	CL, ML	A-6, A-4	0	0	95-100	90-98	75-95	50-80	29-33	8-13
	18-41	Clay loam	CL, ML	A-6	0	0	95-100	90-98	75-95	55-85	33-39	12-18
	41-60	Sandy clay loam	SC, CL, SM	A-6, A-4	0	0	95-100	90-98	60-95	35-65	29-39	8-15
614B:												
Chenoa-------	0-15	Silty clay loam	CL, ML	A-7-5, A-7-6	0	0	100	100	97-100	93-100	40-46	15-19
	15-28	Silty clay loam, silty clay	CL, MH, CH	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	28-47	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	47-60	Silty clay loam, silt loam	ML, CL	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17
614B2:												
Chenoa-------	0-8	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	8-28	Silty clay loam	CL, CH, MH	A-7-6	0	0	100	100	97-100	95-100	45-52	22-28
	28-56	Silty clay loam	CL, ML	A-6	0	0	95-100	85-98	80-95	70-95	33-39	12-17
	56-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
622B2:												
Wyanet-------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	8-11
	8-16	Silty clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	65-90	33-39	13-18
	16-24	Clay loam	CL, ML	A-6	0	0	90-100	85-100	70-95	50-80	33-39	12-18
	24-32	Loam	CL, ML, SC	A-4, A-6	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	32-60	Loam	CL-ML, CL, ML, SC, SC-SM	A-4	0	0-3	90-100	85-100	70-90	45-70	22-28	4-10
622C2:												
Wyanet-------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-90	65-85	29-33	8-11
	8-26	Clay loam	CL, ML	A-6	0	0	90-100	85-100	70-90	50-80	33-39	12-18
	26-34	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	34-60	Loam	CL-ML, CL, ML, SC, SC-SM	A-4	0	0-3	90-100	85-100	70-90	45-70	22-28	4-10
663A:												
Clare--------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	11-16	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	16-30	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	30-44	Clay loam	CL, ML	A-6	0	0	90-100	85-98	75-95	54-83	33-39	12-18
	44-60	Stratified silt loam to loam	CL-ML, CL, ML	A-4	0	0	93-100	75-97	65-98	50-85	22-28	4-10
667A:												
Kaneville----	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	6-16
	7-12	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	12-36	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	36-55	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	85-100	24-37	7-18
	55-60	Stratified sandy loam to loam	SC, SC-SM, CL-ML, CL, SM	A-4, A-2-4	0	0	95-100	85-100	55-95	30-65	22-28	4-10
667B:												
Kaneville----	0-7	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	6-16
	7-11	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	11-46	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	46-50	Loam	CL, ML, SC	A-6, A-4	0	0	95-100	90-100	65-95	45-70	25-33	8-14
	50-60	Sandy loam	SC, SC-SM, CL-ML, CL, SM	A-4	0	0	95-100	90-98	65-95	35-60	22-28	4-10
687B2:												
Penfield-----	0-8	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	70-95	50-75	25-35	8-20
	8-15	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	75-95	50-80	30-35	8-15
	15-30	Sandy clay loam	SC, CL, SM	A-6, A-4	0	0	97-100	95-100	60-95	35-65	30-40	8-15
	30-44	Sandy loam	SC, SC-SM, CL-ML, SM, CL	A-4	0	0	97-100	95-100	65-95	35-60	20-30	5-10
	44-53	Very fine sandy loam	SC, SM, SC-SM	A-4	0	0	98-100	90-100	90-100	40-50	25-30	5-10
	53-60	Stratified silt loam to very fine sandy loam	CL-ML, CL, ML	A-4	0	0	98-100	90-100	90-100	55-85	20-25	NP-10

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
687C2:												
Penfield-----	0-7	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	70-95	50-75	25-35	8-20
	7-13	Loam	CL, ML	A-6, A-4	0	0	97-100	95-100	75-95	50-80	30-35	8-15
	13-37	Clay loam	CL, ML	A-6	0	0	97-100	95-100	60-95	55-85	35-40	15-20
	37-42	Sandy loam	SC, CL, SM, CL-ML, SC-SM	A-4	0	0	95-100	90-100	65-95	35-60	20-30	5-10
	42-60	Stratified sandy loam to coarse sand	SM, SW-SM, SW-SC, SC-SM	A-2-4, A-1-b, A-4	0	0	95-100	80-100	30-60	10-50	20-25	NP-5
715A:												
Arrowsmith---	0-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	5-15
	12-30	Silty clay loam	ML, CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	30-39	Silt loam	ML, CL	A-4, A-6	0	0	100	100	96-100	94-100	22-37	7-18
	39-60	Silt loam, silt	CL, ML, CL-ML	A-4, A-6	0	0	100	100	96-100	95-100	20-35	3-15
721A:												
Drummer------	0-14	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	14-41	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	37-46	16-24
	41-47	Loam	CL, ML, SC-SM, SC	A-6, A-4	0	0	95-100	90-100	70-90	45-80	25-33	8-14
	47-60	Stratified loam to sandy loam	SC-SM, CL-ML, CL, SC	A-2-4, A-4	0	0	95-100	80-100	55-95	30-65	22-28	4-10
Elpaso-------	0-21	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	21-44	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	44-69	Silty clay loam, silt loam	ML, CL	A-6	0	0	95-100	85-100	75-95	60-85	24-37	7-18
	69-80	Silty clay loam, silt loam	CL, ML	A-6	0	0	95-100	85-100	75-95	60-85	25-33	6-17
802B:												
Orthents, loamy-------	0-10	Clay loam	CL, ML	A-6	0-1	0-5	95-100	90-100	85-95	50-80	30-40	10-15
	10-60	Clay loam, silty clay loam, loam	CL, ML, SC	A-6	0-1	0-5	95-100	85-100	85-95	40-85	30-40	10-20
865:												
Pits, gravel.												
893B:												
Catlin-------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	97-100	95-100	25-35	5-15
	11-16	Silty clay loam	CL, ML	A-7-6	0	0	100	100	97-100	95-100	40-45	15-20
	16-41	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	35-45	15-25
	41-45	Clay loam	CL	A-6	0	0	90-98	85-98	76-95	54-83	35-40	15-20
	45-60	Loam	CL, CL-ML, SC-SM, SC, ML	A-4, A-6	0-1	0-3	90-100	85-95	70-90	45-70	20-35	5-15
Saybrook-----	0-15	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	15-32	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-36	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam	CL, ML, SC, SC-SM	A-6, A-4	0-1	0-3	85-100	80-95	70-90	45-70	27-33	8-14

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
902A:												
Ipava---------	0-10	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	4-14
	10-18	Silty clay loam	CL, ML	A-7-5, A-7-6	0	0	100	100	97-100	95-100	40-46	15-20
	18-31	Silty clay loam, silty clay	CH, MH, CL	A-7-6, A-7-5	0	0	100	100	97-100	95-100	45-57	22-32
	31-50	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	50-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
Sable---------	0-23	Silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-46	15-19
	23-38	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	35-45	15-25
	38-47	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	25-40	9-20
	47-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	25-35	9-20
964D:												
Miami---------	0-4	Silt loam	CL, ML	A-6	0	0	95-100	95-100	90-98	80-90	29-37	10-16
	4-12	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	85-95	75-90	33-39	13-18
	12-28	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	28-33	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	33-60	Loam	CL-ML, CL, ML, SC, SC-SM	A-4	0	0-3	90-100	85-98	75-95	45-75	22-28	4-10
Hennepin------	0-5	Clay loam	CL, ML	A-6	0	0	90-100	85-100	75-95	50-80	33-39	13-18
	5-16	Clay loam	CL, ML	A-6	0	0-1	90-100	85-98	75-95	55-85	33-39	12-18
	16-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0-1	0-3	85-100	80-95	70-90	45-70	22-33	4-14
964F:												
Miami---------	0-6	Loam	CL, ML	A-4, A-6	0	0-1	100	95-100	80-100	50-85	16-37	1-16
	6-11	Loam	CL, ML, CL-ML	A-4, A-6	0	0-1	100	95-100	80-100	50-85	21-33	3-13
	11-28	Clay loam	CL, ML	A-6	0	0-3	90-100	85-98	75-95	55-85	33-39	12-18
	28-47	Loam	CL-ML, SC, ML, SC-SM, CL	A-4	0-1	0-3	90-100	85-98	75-95	45-75	22-28	4-10
	47-60	Gravelly sandy loam	SC, SC-SM, SP-SC, SM	A-2-4, A-4, A-1-b	0-1	0-3	85-95	55-75	35-65	10-45	22-28	4-10
Hennepin------	0-6	Silt loam	CL, ML	A-4, A-6	0	0	95-100	95-100	90-98	80-90	29-33	7-13
	6-19	Loam	CL, ML, SC	A-6, A-4	0	0-1	90-100	80-100	70-90	45-70	25-33	8-14
	19-60	Loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	80-95	70-90	45-70	22-33	4-14
3107A:												
Sawmill-------	0-32	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	32-58	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	58-65	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
8073A:												
Ross----------	0-32	Loam	CL-ML, ML, SM	A-4	0	0	90-100	80-100	70-90	45-70	22-33	NP-8
	32-39	Silt loam	CL, ML	A-4, A-6	0	0	100	97-100	95-100	85-100	25-33	9-13
	39-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	80-100	80-90	65-85	22-33	4-13

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
8074A:												
Radford------	0-21	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	21-29	Stratified silt loam to silty clay loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	29-60	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
8077A:												
Huntsville---	0-27	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	27-52	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
	52-65	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	65-80	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-18
8107A:												
Sawmill------	0-26	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	26-53	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	53-60	Stratified silty clay loam to clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
8451A:												
Lawson-------	0-28	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	24-37	4-14
	28-60	Silt loam	CL, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	24-37	7-17
8720A:												
Aetna--------	0-8	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	8-22	Stratified silt loam to silty clay loam	CL	A-6	0	0	100	97-100	95-100	85-100	35-40	15-21
	22-41	Silt loam, silty clay loam	CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	40-46	15-19
	41-60	Silty clay loam	CL, CH, MH	A-7-6, A-7-5, A-6	0	0	100	97-100	95-100	85-100	37-52	16-28
MW:												
Miscellaneous water.												
W:												
Water.												

Table 19a.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
									Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*					
17A:													
Keomah------------	0-11	0-7	67-84	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	.43	.43	5	6	48
	11-18	0-7	67-84	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	.49	.49			
	18-33	0-7	51-65	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	.37	.37			
	33-51	0-7	58-73	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	.37	.37			
	51-89	0-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.22	0.0-2.9	.49	.49			
27B2:													
Miami-------------	0-9	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	.43	.43	5	6	48
	9-21	15-20	45-60	25-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.32	.32			
	21-33	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	33-60	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
27C2:													
Miami-------------	0-7	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	.43	.43	5	6	48
	7-11	15-20	45-60	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.32	.32			
	11-23	20-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	23-36	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	36-60	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
27D2:													
Miami-------------	0-4	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	.43	.43	5	6	48
	4-12	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.32	.32			
	12-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	28-33	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	33-60	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
43A:													
Ipava-------------	0-10	2-7	66-83	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	10-18	2-7	58-71	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	.24	.24			
	18-31	2-7	48-65	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	.37	.37			
	31-50	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	50-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.49	.49			
51A:													
Muscatune---------	0-16	2-7	66-83	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	16-22	2-7	58-73	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	22-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	46-60	2-7	66-83	15-30	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.49	.49			
56B2:													
Dana--------------	0-7	2-15	58-79	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.37	.37	5	6	48
	7-34	2-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	34-53	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	53-60	30-45	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
56C2:													
Dana--------------	0-8	2-15	50-69	30-35	1.35-1.55	0.6-2	0.16-0.19	3.0-5.9	.32	.32	5	7	38
	8-32	2-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	32-47	20-40	25-53	27-35	1.50-1.60	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	47-60	30-50	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
59A:													
Lisbon------------	0-11	3-15	58-82	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	4	6	48
	11-14	3-15	50-72	25-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	.24	.24			
	14-25	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	25-32	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	32-60	30-50	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.32	.32			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*					
60B2:													
La Rose-----------	0-7	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	.32	.37	4	6	48
	7-15	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	15-60	30-50	28-50	15-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
60C2:													
La Rose-----------	0-7	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	.32	.37	4	6	48
	7-19	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	19-60	30-50	28-50	15-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
60D2:													
La Rose-----------	0-7	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	.32	.37	4	6	48
	7-12	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	12-60	30-50	28-50	15-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
61A:													
Atterberry--------	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	.37	.37	5	6	48
	9-17	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.43	.43			
	17-48	2-7	60-74	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.37	.37			
	48-60	2-7	45-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	.49	.49			
67A:													
Harpster----------	0-18	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	.24	.24	5	4L	86
	18-41	2-15	50-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	41-56	2-30	58-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.49	.49			
	56-60	30-50	28-55	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	.32	.32			
68A:													
Sable-------------	0-23	1-7	58-73	27-35	1.15-1.35	0.6-2	0.17-0.22	3.0-5.9	.20	.20	5	7	38
	23-38	1-7	58-73	27-35	1.35-1.45	0.6-2	0.13-0.21	3.0-5.9	.37	.37			
	38-47	1-7	66-75	24-27	1.30-1.50	0.6-2	0.13-0.23	0.0-2.9	.49	.49			
	47-60	1-7	66-79	20-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
86A:													
Osco--------------	0-13	2-7	66-83	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28	5	6	48
	13-38	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	38-44	2-7	66-83	15-27	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	.49	.49			
	44-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.43	.43			
86B:													
Osco--------------	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	.49	.49			
86B2:													
Osco--------------	0-8	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.37	.37	5	6	48
	8-42	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	42-51	2-7	66-83	15-27	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	.49	.49			
	51-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.49	.49			
91B2:													
Swygert-----------	0-7	2-15	58-73	30-35	1.35-1.55	0.6-2	0.19-0.22	3.0-5.9	.20	.20	4	7	38
	7-30	0-20	40-60	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	.32	.32			
	30-48	0-20	40-60	40-50	1.45-1.65	0.06-0.2	0.10-0.13	3.0-5.9	.32	.32			
	48-60	0-20	40-60	40-55	1.60-1.80	0.02-0.06	0.05-0.09	3.0-5.9	.37	.37			
125A:													
Selma-------------	0-23	30-50	28-50	10-27	1.30-1.50	0.6-2	0.14-0.18	0.0-2.9	.24	.28	5	6	48
	23-28	30-50	28-50	20-27	1.35-1.55	0.6-2	0.10-0.15	0.0-2.9	.32	.37			
	28-41	15-30	50-65	20-27	1.40-1.60	0.6-2	0.10-0.17	0.0-2.9	.37	.43			
	41-53	55-75	10-45	5-20	1.45-1.65	2-6	0.09-0.13	0.0-2.9	.20	.24			
	53-60	65-80	10-25	5-15	1.45-1.65	2-6	0.07-0.10	0.0-2.9	.20	.24			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
134B2:													
Camden------------	0-8	2-7	66-83	15-27	1.35-1.55	0.6-2	0.17-0.21	0.0-2.9	.49	.49	5	6	48
	8-31	2-7	58-71	25-35	1.35-1.55	0.6-2	0.17-0.20	3.0-5.9	.43	.43			
	31-41	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	41-50	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	50-60	45-80	0-27	20-30	1.50-1.70	0.6-2	0.14-0.17	0.0-2.9	.24	.28			
134C2:													
Camden------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	34-43	30-50	28-50	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	.28	.28			
145B:													
Saybrook----------	0-15	2-15	58-84	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28	5	6	48
	15-32	2-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	32-36	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.32			
	36-60	30-50	28-50	20-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
145B2:													
Saybrook----------	0-8	2-15	58-79	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.28	.28	5	6	48
	8-28	2-15	55-74	25-30	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	28-31	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.32			
	31-60	30-50	28-50	20-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
145C2:													
Saybrook----------	0-9	2-15	58-79	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.28	.28	5	6	48
	9-30	2-15	55-74	25-30	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	30-36	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.32			
	36-60	30-50	28-50	20-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
146A:													
Elliott-----------	0-6	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.24	.24	4	6	48
	6-11	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	.20	.20			
	11-16	1-20	30-61	40-50	1.40-1.60	0.06-0.6	0.10-0.13	6.0-8.9	.32	.32			
	16-41	5-20	40-65	27-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	41-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	.43	.43			
148B2:													
Proctor-----------	0-13	2-15	58-79	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	13-32	2-15	50-72	27-35	1.35-1.55	0.6-2	0.13-0.16	3.0-5.9	.32	.32			
	32-49	30-50	28-50	20-28	1.45-1.65	0.6-2	0.11-0.19	0.0-2.9	.28	.28			
	49-60	45-75	15-30	15-25	1.50-1.70	0.6-2	0.07-0.14	0.0-2.9	.15	.20			
148C2:													
Proctor-----------	0-13	2-15	58-78	20-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	.37	.37	5	6	48
	13-36	2-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	36-46	20-35	35-60	20-30	1.45-1.65	0.6-2	0.13-0.16	3.0-5.9	.32	.32			
	46-60	30-50	45-65	5-15	1.55-1.75	0.6-2	0.07-0.19	0.0-2.9	.43	.43			
149A:													
Brenton-----------	0-14	2-15	58-82	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	14-33	2-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.28	.28			
	33-45	40-55	30-45	15-27	1.50-1.70	0.6-2	0.14-0.17	0.0-2.9	.28	.28			
	45-54	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	54-80	0-20	60-95	5-20	1.35-1.55	0.2-0.6	0.09-0.14	0.0-2.9	.28	.32			
152A:													
Drummer-----------	0-14	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.23	3.0-5.9	.24	.24	5	7	38
	14-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	41-47	25-45	28-50	20-27	1.45-1.65	0.6-2	0.11-0.17	0.0-2.9	.32	.32			
	47-60	45-65	25-45	10-20	1.55-1.75	0.6-2	0.11-0.17	0.0-2.9	.28	.28			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*					
154A:													
Flanagan----------	0-18	2-7	66-79	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	18-38	2-7	53-64	35-40	1.30-1.50	0.2-0.6	0.17-0.21	6.0-8.9	.37	.37			
	38-45	3-15	50-72	25-35	1.30-1.50	0.6-2	0.17-0.21	3.0-5.9	.43	.43			
	45-49	15-30	50-65	20-27	1.40-1.60	0.6-2	0.10-0.17	0.0-2.9	.37	.37			
	49-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.10-0.14	0.0-2.9	.37	.37			
171B:													
Catlin------------	0-11	1-7	66-85	18-27	1.30-1.40	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	11-16	1-7	58-73	27-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	.28	.28			
	16-41	2-8	58-73	27-35	1.35-1.45	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	41-45	20-40	25-53	27-35	1.45-1.55	0.6-2	0.12-0.16	3.0-5.9	.28	.32			
	45-60	30-40	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
171B2:													
Catlin------------	0-8	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.32	.32	5	6	48
	8-34	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.28	.28			
	34-43	3-15	58-82	15-27	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	.37	.37			
	43-60	30-40	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
171C2:													
Catlin------------	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.32	.32	4	6	48
	9-40	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.28	.28			
	40-50	3-15	58-72	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	50-55	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.28	.32			
	55-60	20-40	30-53	27-30	1.65-1.85	0.2-0.6	0.06-0.12	3.0-5.9	.37	.43			
193B2:													
Mayville----------	0-6	3-15	58-79	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.37	.37	5	6	48
	6-8	2-7	66-85	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.43	.43			
	8-27	3-15	50-72	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	27-34	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	34-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.20	.28			
193C2:													
Mayville----------	0-6	3-15	58-79	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.37	.37	5	6	48
	6-24	3-15	50-72	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	24-29	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	29-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.20	.28			
198A:													
Elburn------------	0-16	2-7	66-83	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	.32	.32			
	58-62	65-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	.28	.28			
199A:													
Plano-------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	49-60	15-70	0-70	15-32	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	.32	.32			
	60-72	15-80	0-80	5-20	1.50-1.70	2-6	0.11-0.22	0.0-2.9	.28	.28			
199B:													
Plano-------------	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	45-55	15-70	0-70	15-30	1.30-1.55	0.6-6	0.09-0.16	0.0-2.9	.32	.32			
	55-72	65-80	5-50	5-15	1.50-1.70	2-6	0.11-0.22	0.0-2.9	.28	.28			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
199B2:													
Plano	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	.28	.28	5	6	48
	9-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	46-53	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.37	.37			
	53-60	50-75	10-45	5-20	1.45-1.65	2-6	0.07-0.10	0.0-2.9	.15	.20			
213A:													
Normal	0-11	0-7	66-85	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	.28	.28	5	6	48
	11-20	0-7	66-85	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.55	.55			
	20-37	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	37-52	0-7	58-75	25-35	1.30-1.50	0.6-2	0.18-0.23	3.0-5.9	.43	.43			
	52-75	0-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
	75-80	60-80	10-30	10-20	1.50-1.70	2-6	0.06-0.10	0.0-2.9	.10	.15			
223B2:													
Varna	0-12	3-15	58-77	20-27	1.40-1.60	0.6-2	0.18-0.21	0.0-2.9	.28	.28	4	6	48
	12-27	3-15	40-62	35-45	1.35-1.55	0.06-0.2	0.15-0.18	6.0-8.9	.32	.32			
	27-39	5-20	45-68	27-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	39-60	5-20	45-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	.43	.43			
223C2:													
Varna	0-8	3-15	58-71	27-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.32	.32	4	7	38
	8-27	3-15	40-62	35-45	1.35-1.55	0.06-0.2	0.15-0.18	6.0-8.9	.32	.32			
	27-34	5-20	45-68	27-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	34-60	5-20	45-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	.43	.43			
224C2:													
Strawn	0-4	23-35	37-50	15-27	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	.37	.37	5	5	56
	4-18	20-35	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.37	.37			
	18-24	20-35	33-50	20-35	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	24-60	30-45	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.32	.32			
224G:													
Strawn	0-2	23-35	37-50	15-27	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	.37	.37	5	5	56
	2-5	23-35	28-50	15-27	1.40-1.60	0.6-2	0.10-0.14	0.0-2.9	.37	.37			
	5-23	20-35	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.37	.37			
	23-60	30-45	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.32	.32			
232A:													
Ashkum	0-12	1-15	45-64	35-40	1.20-1.45	0.2-0.6	0.18-0.21	6.0-8.9	.20	.20	5	4	86
	12-29	2-15	40-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	.32	.32			
	29-54	5-20	40-65	30-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	54-60	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.07-0.15	3.0-5.9	.43	.43			
233B:													
Birkbeck	0-4	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.43	.43	5	6	48
	4-9	2-7	66-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49			
	9-54	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.37	.37			
	54-60	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.32			
	60-68	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.10-0.14	0.0-2.9	.37	.37			
233B2:													
Birkbeck	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49	5	6	48
	9-48	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	48-55	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	55-60	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
233C2:													
Birkbeck	0-7	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49	5	6	48
	7-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	46-57	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	57-60	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
236A:													
Sabina------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	.43	.43	5	6	48
	7-18	2-7	66-83	15-27	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	.49	.49			
	18-30	2-7	53-65	35-40	1.30-1.50	0.2-0.6	0.15-0.19	6.0-8.9	.37	.37			
	30-45	3-15	58-75	25-35	1.35-1.55	0.6-2	0.17-0.20	3.0-5.9	.37	.37			
	45-51	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.37			
	51-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.10-0.14	0.0-2.9	.37	.37			
244A:													
Hartsburg---------	0-17	2-7	58-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	.24	.24	5	7	38
	17-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	34-60	3-15	66-83	15-27	1.45-1.65	0.6-2	0.19-0.26	0.0-2.9	.49	.49			
272A:													
Edgington---------	0-20	2-7	66-83	15-27	1.20-1.40	0.6-2	0.22-0.26	0.0-2.9	.28	.28	5	6	48
	20-31	2-7	66-83	15-27	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	.32	.32			
	31-55	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.32	.32			
	55-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.32	.32			
279B2:													
Rozetta-----------	0-6	0-7	66-80	20-27	1.20-1.40	0.6-2	0.17-0.21	0.0-2.9	.49	.49	5	6	48
	6-53	0-7	58-73	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	53-60	0-7	66-85	15-27	1.40-1.60	0.2-0.6	0.19-0.26	0.0-2.9	.49	.49			
290A:													
Warsaw------------	0-14	30-45	35-50	15-27	1.30-1.50	0.6-2	0.15-0.21	0.0-2.9	.24	.24	4	6	48
	14-26	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.28	.32			
	26-35	20-35	30-53	27-35	1.55-1.75	0.6-2	0.13-0.17	3.0-5.9	.28	.43			
	35-60	90-97	3-5	0-5	1.35-1.55	20-60	0.03-0.05	0.0-2.9	.10	.37			
290B2:													
Warsaw------------	0-9	30-45	35-50	15-27	1.30-1.50	0.6-2	0.15-0.21	0.0-2.9	.28	.32	4	6	48
	9-28	45-55	15-28	20-32	1.50-1.70	0.6-2	0.10-0.14	3.0-5.9	.15	.20			
	28-35	55-80	5-30	10-20	1.60-1.80	2-6	0.07-0.11	0.0-2.9	.15	.28			
	35-60	90-97	3-7	0-5	1.35-1.55	20-60	0.03-0.05	0.0-2.9	.15	.20			
293A:													
Andres------------	0-11	10-30	50-70	20-27	1.35-1.55	0.6-2	0.17-0.21	0.0-2.9	.24	.24	5	6	48
	11-26	20-50	15-53	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	26-50	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	50-60	5-20	45-73	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	.43	.43			
294B:													
Symerton----------	0-15	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	.24	.24	5	6	48
	15-19	10-20	45-63	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	.20	.20			
	19-35	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	.28	.32			
	35-39	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	39-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	.43	.43			
318B2:													
Lorenzo-----------	0-7	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	.28	.28	3	6	48
	7-14	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.28	.32			
	14-22	45-70	0-28	20-35	1.60-1.80	0.6-2	0.10-0.14	3.0-5.9	.15	.20			
	22-60	85-97	0-14	1-5	1.55-1.75	20-60	0.02-0.06	0.0-2.9	.02	.05			
322B2:													
Russell-----------	0-6	3-15	58-79	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49	5	6	48
	6-30	3-15	50-72	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	30-46	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	46-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.10-0.14	0.0-2.9	.37	.43			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
322C2:													
Russell-----------	0-7	3-15	58-79	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49	4	6	48
	7-27	3-15	50-72	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.43	.43			
	27-56	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	56-72	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.10-0.14	0.0-2.9	.37	.43			
327B2:													
Fox---------------	0-6	15-30	43-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	.37	.37	4	6	48
	6-10	15-30	43-65	20-27	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	.43	.43			
	10-21	15-20	53-60	27-35	1.45-1.65	0.6-2	0.14-0.19	3.0-5.9	.32	.32			
	21-37	35-55	10-40	25-35	1.40-1.60	6-20	0.10-0.14	3.0-5.9	.10	.10			
	37-60	85-95	0-15	0-10	1.40-1.60	20-60	0.03-0.05	0.0-2.9	.15	.20			
327C2:													
Fox---------------	0-8	15-30	50-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	.37	.37	4	6	48
	8-22	15-20	45-58	27-35	1.55-1.65	0.6-2	0.14-0.17	3.0-5.9	.43	.43			
	22-28	45-70	0-35	20-35	1.55-1.65	0.6-2	0.10-0.14	3.0-5.9	.32	.32			
	28-35	45-70	0-35	20-35	1.55-1.75	0.6-2	0.10-0.13	3.0-5.9	.10	.15			
	35-60	90-97	3-10	0-5	1.40-1.60	6-20	0.02-0.05	0.0-2.9	.10	.10			
330A:													
Peotone-----------	0-28	2-7	53-63	35-40	1.25-1.45	0.2-0.6	0.17-0.22	6.0-8.9	.24	.24	5	4	86
	28-44	3-15	53-65	35-40	1.30-1.50	0.2-0.6	0.16-0.19	6.0-8.9	.37	.37			
	44-60	3-15	53-73	27-40	1.30-1.50	0.2-0.6	0.18-0.21	6.0-8.9	.43	.43			
343A:													
Kane--------------	0-14	15-30	50-65	20-27	1.30-1.50	0.6-2	0.16-0.20	0.0-2.9	.28	.28	4	6	48
	14-17	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.43	.43			
	17-24	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	24-35	45-70	10-28	20-35	1.60-1.80	0.6-2	0.10-0.14	3.0-5.9	.15	.20			
	35-68	70-90	5-20	1-12	1.30-1.50	6-20	0.03-0.05	0.0-2.9	.15	.20			
	68-80	70-90	5-20	1-12	1.30-1.50	6-20	0.04-0.06	0.0-2.9	.10	.15			
481A:													
Raub--------------	0-18	2-15	58-84	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	18-32	2-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	32-50	20-35	25-53	26-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	50-60	30-50	28-50	20-30	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
496A:													
Fincastle---------	0-10	2-7	66-84	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	.43	.43	5	5	56
	10-14	3-15	58-82	15-27	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	.49	.49			
	14-35	3-15	50-70	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.37	.37			
	35-43	20-40	28-53	27-32	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	43-49	25-40	32-53	18-28	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	49-60	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
533:													
Urban land.													
541B2:													
Graymont----------	0-8	2-10	58-76	22-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	8-27	2-10	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	27-39	10-20	45-63	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.28	.32			
	39-60	10-20	50-66	24-27	1.60-1.80	0.06-0.2	0.06-0.12	0.0-2.9	.43	.49			
567A:													
Elkhart-----------	0-14	1-7	66-85	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	14-30	1-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	30-35	1-7	66-85	15-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	.43	.43			
	35-60	1-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
567B:													
Elkhart-----------	0-10	1-7	66-85	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	10-26	1-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	26-77	1-7	66-85	15-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	.43	.43			
	77-84	1-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
567B2:													
Elkhart-----------	0-8	1-7	66-85	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	8-26	1-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	26-30	1-7	66-85	15-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	.43	.43			
	30-60	1-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
570D2:													
Martinsville------	0-6	20-35	50-70	15-27	1.40-1.60	0.6-2	0.16-0.21	0.0-2.9	.37	.37	5	5	56
	6-10	20-35	50-70	18-27	1.45-1.65	0.6-2	0.12-0.17	0.0-2.9	.37	.37			
	10-18	25-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.16	0.0-2.9	.37	.37			
	18-41	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.24			
	41-60	45-55	15-28	20-35	1.50-1.70	0.6-2	0.10-0.14	3.0-5.9	.24	.28			
614B:													
Chenoa------------	0-15	1-8	57-72	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	.28	.28	5	7	38
	15-28	1-8	47-64	35-45	1.30-1.50	0.6-2	0.18-0.21	6.0-8.9	.37	.37			
	28-47	5-20	40-68	27-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.37	.37			
	47-60	5-20	45-71	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	.43	.43			
614B2:													
Chenoa------------	0-8	1-7	58-73	27-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	.28	.28	4	7	38
	8-28	1-7	53-65	35-40	1.30-1.50	0.2-0.6	0.18-0.21	6.0-8.9	.43	.43			
	28-56	5-20	45-63	27-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	.28	.32			
	56-60	5-20	45-63	27-35	1.60-1.80	0.06-0.2	0.06-0.12	3.0-5.9	.32	.43			
622B2:													
Wyanet------------	0-8	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.22	0.0-2.9	.24	.24	5	6	48
	8-16	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.32	.32			
	16-24	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.37			
	24-32	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.32			
	32-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
622C2:													
Wyanet------------	0-8	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.22	0.0-2.9	.24	.24	5	6	48
	8-26	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.37			
	26-34	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	.32	.32			
	34-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			
663A:													
Clare-------------	0-11	3-15	58-84	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28	5	6	48
	11-16	3-15	58-84	15-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	.37	.37			
	16-30	3-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.32	.32			
	30-44	20-40	25-53	27-32	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.28			
	44-60	15-40	35-55	10-20	1.60-1.80	0.6-2	0.14-0.17	0.0-2.9	.32	.49			
667A:													
Kaneville---------	0-7	2-7	66-83	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.43	.43	5	6	48
	7-12	2-7	66-83	15-27	1.40-1.60	0.6-2	0.17-0.20	0.0-2.9	.49	.49			
	12-36	2-7	50-71	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	.37	.37			
	36-55	3-15	58-82	15-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	.32	.32			
	55-60	45-65	15-45	10-20	1.55-1.75	0.6-2	0.11-0.16	0.0-2.9	.28	.28			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct					
667B:													
Kaneville---------	0-7	2-7	66-83	15-27	1.25-1.45	0.6-2	0.19-0.24	0.0-2.9	.37	.37	5	6	48
	7-11	2-7	66-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	.49	.49			
	11-46	2-7	59-71	27-34	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	.37	.37			
	46-50	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.16	0.0-2.9	.24	.24			
	50-60	52-60	20-36	12-20	1.50-1.70	0.6-2	0.07-0.12	0.0-2.9	.24	.32			
687B2:													
Penfield----------	0-8	30-45	35-50	15-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	.28	.28	5	6	48
	8-15	25-50	28-50	20-27	1.45-1.65	0.6-2	0.17-0.19	0.0-2.9	.28	.28			
	15-30	45-55	15-28	20-32	1.50-1.70	0.6-2	0.16-0.18	3.0-5.9	.28	.28			
	30-44	52-60	20-36	12-20	1.50-1.70	0.6-2	0.07-0.11	0.0-2.9	.28	.32			
	44-53	52-60	20-36	12-20	1.60-1.80	0.6-2	0.14-0.16	0.0-2.9	.28	.32			
	53-60	30-60	35-65	5-15	1.55-1.75	0.6-2	0.19-0.21	0.0-2.9	.28	.32			
687C2:													
Penfield----------	0-7	30-45	35-50	15-27	1.30-1.50	0.6-2	0.15-0.21	0.0-2.9	.28	.28	5	6	48
	7-13	25-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.16	0.0-2.9	.28	.28			
	13-37	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.28	.28			
	37-42	52-60	20-36	12-20	1.50-1.70	2-6	0.07-0.10	0.0-2.9	.28	.32			
	42-60	60-90	0-35	5-15	1.50-1.70	6-20	0.04-0.06	0.0-2.9	.28	.32			
715A:													
Arrowsmith--------	0-12	1-7	66-84	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	12-30	1-7	58-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	30-39	1-7	66-87	12-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.43	.43			
	39-60	1-7	75-91	8-18	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
721A:													
Drummer-----------	0-14	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.23	3.0-5.9	.24	.24	5	7	38
	14-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	41-47	25-45	28-50	20-27	1.45-1.65	0.6-2	0.11-0.17	0.0-2.9	.32	.32			
	47-60	45-65	25-45	10-20	1.55-1.75	0.6-2	0.11-0.17	0.0-2.9	.28	.28			
Elpaso------------	0-21	2-7	58-72	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	.24	.24	5	7	38
	21-44	2-7	58-72	27-35	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	.37	.37			
	44-69	15-30	50-70	15-30	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	.32	.32			
	69-80	15-30	50-70	15-27	1.45-1.65	0.2-0.6	0.05-0.15	0.0-2.9	.37	.37			
802B:													
Orthents, loamy---	0-10	20-45	20-53	27-35	1.50-1.70	0.2-0.6	0.18-0.20	3.0-5.9	.43	.43	5	6	48
	10-60	15-50	20-63	22-30	1.40-1.75	0.06-2	0.15-0.20	3.0-5.9	.43	.43			
865:													
Pits, gravel.													
893B:													
Catlin------------	0-11	1-7	66-85	18-27	1.30-1.40	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	11-16	1-7	58-73	27-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	.28	.28			
	16-41	2-8	58-73	27-35	1.35-1.45	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	41-45	20-40	25-53	27-35	1.45-1.55	0.6-2	0.12-0.16	3.0-5.9	.28	.32			
	45-60	30-40	28-50	15-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
Saybrook----------	0-15	2-15	58-84	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28	5	6	48
	15-32	2-15	50-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.43	.43			
	32-36	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.24	.32			
	36-60	30-50	28-50	20-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.37			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*					
902A:													
Ipava	0-10	1-7	66-85	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.28	.28	5	6	48
	10-18	1-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	.24	.24			
	18-31	1-7	48-65	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	.37	.37			
	31-50	1-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	.37	.37			
	50-60	1-7	66-85	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.43	.43			
Sable	0-23	1-7	58-73	27-35	1.15-1.35	0.6-2	0.17-0.22	3.0-5.9	.20	.20	5	7	38
	23-38	1-7	58-73	27-35	1.35-1.45	0.6-2	0.13-0.21	3.0-5.9	.37	.37			
	38-47	1-7	66-75	24-27	1.30-1.50	0.6-2	0.13-0.23	0.0-2.9	.49	.49			
	47-60	1-7	66-79	20-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.55	.55			
964D:													
Miami	0-4	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	.43	.43	5	6	48
	4-12	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.32	.32			
	12-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	28-33	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	.24	.28			
	33-60	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.37	.43			
Hennepin	0-5	20-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	.28	.28	4	6	48
	5-16	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	16-60	30-50	28-50	18-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.43	.43			
964F:													
Miami	0-6	26-52	28-50	8-27	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	.28	.28	4	5	56
	6-11	26-52	28-50	8-27	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	.32	.32			
	11-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	.32	.32			
	28-47	30-50	28-50	10-20	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	.43	.43			
	47-60	55-80	5-30	10-20	1.60-1.80	0.6-2	0.06-0.12	0.0-2.9	.05	.10			
Hennepin	0-6	15-20	53-65	20-27	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	.37	.37	4	6	48
	6-19	30-50	28-50	20-27	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	.32	.32			
	19-60	30-50	28-50	18-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	.43	.43			
3107A:													
Sawmill	0-32	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	.28	.28	5	7	38
	32-58	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	.32	.32			
	58-65	5-25	40-70	25-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	.32	.32			
8073A:													
Ross	0-32	30-50	28-50	10-27	1.25-1.45	0.6-2	0.14-0.18	0.0-2.9	.28	.28	5	6	48
	32-39	3-15	50-70	20-27	1.40-1.60	0.6-2	0.10-0.17	0.0-2.9	.32	.32			
	39-60	15-30	50-65	20-27	1.50-1.70	0.6-2	0.09-0.14	0.0-2.9	.32	.49			
8074A:													
Radford	0-21	3-15	58-81	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.32	.32	5	6	48
	21-29	3-15	58-81	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.49	.49			
	29-60	3-15	58-71	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	.28	.28			
8077A:													
Huntsville	0-27	2-15	58-81	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28	5	6	48
	27-52	2-15	58-81	18-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.28	.28			
	52-65	2-15	58-84	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	.28	.28			
	65-80	2-15	58-84	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	.28	.28			
8107A:													
Sawmill	0-26	2-15	58-73	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	.28	.28	5	7	38
	26-53	5-20	45-70	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	.28	.28			
	53-60	5-21	44-70	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	.28	.28			

Table 19a.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*					
8451A:													
Lawson------------	0-28	3-15	58-81	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	.32	.32	5	6	48
	28-60	3-15	58-81	18-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	.32	.32			
8720A:													
Aetna-------------	0-8	3-15	58-79	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	.37	.37	5	6	48
	8-22	3-15	50-74	25-35	1.35-1.55	0.6-2	0.17-0.20	3.0-5.9	.37	.37			
	22-41	3-15	50-72	25-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	.37	.37			
	41-60	3-15	45-72	27-40	1.30-1.50	0.2-0.6	0.18-0.21	3.0-5.9	.32	.32			
MW: Miscellaneous water.													
W: Water.													

Table 19b.--Physical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
17A:		
Keomah	0-11	1.0-3.0
	11-18	0.1-1.0
	18-33	0.1-0.5
	33-51	0.1-0.5
	51-89	0.0-0.2
27B2:		
Miami	0-9	1.0-2.5
	9-21	0.1-0.5
	21-33	0.1-0.5
	33-60	0.0-0.5
27C2:		
Miami	0-7	1.0-2.5
	7-11	0.1-0.5
	11-23	0.1-0.5
	23-36	0.1-0.5
	36-60	0.0-0.5
27D2:		
Miami	0-4	1.0-2.5
	4-12	0.1-0.5
	12-28	0.1-0.5
	28-33	0.1-0.5
	33-60	0.0-0.5
43A:		
Ipava	0-10	3.5-5.0
	10-18	1.5-3.5
	18-31	0.5-1.5
	31-50	0.1-0.5
	50-60	0.0-0.5
51A:		
Muscatune	0-16	3.5-5.0
	16-22	0.5-1.5
	22-46	0.5-1.5
	46-60	0.0-0.2
56B2:		
Dana	0-7	1.5-3.5
	7-34	0.5-1.5
	34-53	0.1-0.5
	53-60	0.0-0.5
56C2:		
Dana	0-8	1.5-3.5
	8-32	0.5-1.5
	32-47	0.1-0.5
	47-60	0.0-0.5
59A:		
Lisbon	0-11	3.5-5.0
	11-14	1.5-3.5
	14-25	0.5-1.5
	25-32	0.1-0.5
	32-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
60B2:		
La Rose	0-7	1.5-3.5
	7-15	0.1-0.5
	15-60	0.0-0.5
60C2:		
La Rose	0-7	1.5-3.5
	7-19	0.1-0.5
	19-60	0.0-0.5
60D2:		
La Rose	0-7	1.5-3.5
	7-12	0.1-0.5
	12-60	0.0-0.5
61A:		
Atterberry	0-9	1.5-3.5
	9-17	0.1-1.0
	17-48	0.1-0.5
	48-60	0.1-0.5
67A:		
Harpster	0-18	3.5-6.0
	18-41	0.5-1.5
	41-56	0.0-0.5
	56-60	0.0-0.5
68A:		
Sable	0-23	4.5-6.0
	23-38	0.5-1.5
	38-47	0.1-0.5
	47-60	0.0-0.5
86A:		
Osco	0-13	2.5-4.0
	13-38	0.5-1.5
	38-44	0.1-0.5
	44-60	0.0-0.5
86B:		
Osco	0-14	3.0-4.0
	14-55	0.0-1.0
	55-60	0.0-0.5
86B2:		
Osco	0-8	1.5-3.5
	8-42	0.5-1.5
	42-51	0.1-0.5
	51-60	0.0-0.5
91B2:		
Swygert	0-7	1.5-3.5
	7-30	0.5-1.5
	30-48	0.1-0.5
	48-60	0.0-0.5
125A:		
Selma	0-23	4.5-6.0
	23-28	0.5-1.5
	28-41	0.1-0.5
	41-53	0.1-0.5
	53-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
134B2:		
Camden	0-8	1.0-2.5
	8-31	0.1-0.5
	31-41	0.1-0.5
	41-50	0.1-0.5
	50-60	0.0-0.5
134C2:		
Camden	0-7	1.0-2.5
	7-34	0.1-0.5
	34-43	0.0-0.5
	43-80	0.0-0.5
145B:		
Saybrook	0-15	2.5-4.0
	15-32	0.5-1.5
	32-36	0.1-0.5
	36-60	0.0-0.5
145B2:		
Saybrook	0-8	1.5-3.5
	8-28	0.5-1.5
	28-31	0.1-0.5
	31-60	0.0-0.5
145C2:		
Saybrook	0-9	1.5-3.5
	9-30	0.5-1.5
	30-36	0.1-0.5
	36-60	0.0-0.5
146A:		
Elliott	0-6	3.5-5.0
	6-11	2.5-4.0
	11-16	0.5-1.5
	16-41	0.1-0.5
	41-60	0.0-0.5
148B2:		
Proctor	0-13	1.5-3.5
	13-32	0.5-1.5
	32-49	0.1-1.5
	49-60	0.1-0.5
148C2:		
Proctor	0-13	1.5-3.5
	13-36	0.5-1.5
	36-46	0.1-0.5
	46-60	0.0-0.5
149A:		
Brenton	0-14	3.5-5.0
	14-33	0.5-1.5
	33-45	0.1-0.5
	45-54	0.1-0.5
	54-80	0.0-0.5
152A:		
Drummer	0-14	4.5-7.0
	14-41	0.5-1.5
	41-47	0.2-0.5
	47-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
154A:		
Flanagan	0-18	3.5-5.0
	18-38	0.5-1.5
	38-45	0.1-0.5
	45-49	0.1-0.5
	49-60	0.0-0.5
171B:		
Catlin	0-11	2.5-4.0
	11-16	1.5-3.5
	16-41	0.5-1.5
	41-45	0.1-0.5
	45-60	0.0-0.5
171B2:		
Catlin	0-8	1.5-3.5
	8-34	0.5-1.5
	34-43	0.1-0.5
	43-60	0.0-0.5
171C2:		
Catlin	0-9	1.5-3.5
	9-40	0.5-1.5
	40-50	0.1-0.5
	50-55	0.1-0.5
	55-60	0.0-0.5
193B2:		
Mayville	0-6	1.0-2.5
	6-8	0.1-1.0
	8-27	0.1-0.5
	27-34	0.1-0.5
	34-60	0.0-0.5
193C2:		
Mayville	0-6	1.0-2.5
	6-24	0.1-0.5
	24-29	0.1-0.5
	29-60	0.0-0.5
198A:		
Elburn	0-16	3.5-5.0
	16-49	0.5-1.5
	49-58	0.1-0.5
	58-62	0.0-0.5
199A:		
Plano	0-14	3.0-5.0
	14-49	0.2-1.0
	49-60	0.1-0.5
	60-72	0.1-0.5
199B:		
Plano	0-15	3.0-5.0
	15-45	0.2-1.0
	45-55	0.1-0.5
	55-72	0.1-0.5
199B2:		
Plano	0-9	1.5-3.5
	9-46	0.5-1.5
	46-53	0.1-0.5
	53-60	0.1-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	Pct
213A:		
Normal	0-11	3.5-5.0
	11-20	0.1-1.0
	20-37	0.2-0.8
	37-52	0.2-0.8
	52-75	0.0-0.5
	75-80	0.0-0.5
223B2:		
Varna	0-12	1.5-3.5
	12-27	0.5-1.5
	27-39	0.1-0.5
	39-60	0.0-0.5
223C2:		
Varna	0-8	1.5-3.5
	8-27	0.5-1.5
	27-34	0.1-0.5
	34-60	0.0-0.5
224C2:		
Strawn	0-4	1.0-2.5
	4-18	0.1-0.5
	18-24	0.1-0.5
	24-60	0.0-0.5
224G:		
Strawn	0-2	1.0-2.5
	2-5	0.1-1.0
	5-23	0.1-0.5
	23-60	0.0-0.5
232A:		
Ashkum	0-12	3.0-7.0
	12-29	0.5-2.5
	29-54	0.1-0.5
	54-60	0.0-0.5
233B:		
Birkbeck	0-4	1.0-3.0
	4-9	0.1-1.0
	9-54	0.1-0.5
	54-60	0.1-0.5
	60-68	0.0-0.5
233B2:		
Birkbeck	0-9	1.0-2.5
	9-48	0.1-0.5
	48-55	0.1-0.5
	55-60	0.0-0.5
233C2:		
Birkbeck	0-7	1.0-2.5
	7-46	0.1-0.5
	46-57	0.1-0.5
	57-60	0.0-0.5
236A:		
Sabina	0-7	1.0-3.5
	7-18	0.1-1.0
	18-30	0.1-0.5
	30-45	0.1-0.5
	45-51	0.1-0.5
	51-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
244A:		
Hartsburg	0-17	4.5-6.0
	17-34	0.5-1.5
	34-60	0.0-0.5
272A:		
Edgington	0-20	4.5-6.0
	20-31	0.1-1.0
	31-55	0.5-1.5
	55-60	0.0-0.5
279B2:		
Rozetta	0-6	1.0-2.5
	6-53	0.1-0.5
	53-60	0.0-0.5
290A:		
Warsaw	0-14	2.5-4.0
	14-26	0.5-1.5
	26-35	0.0-0.5
	35-60	0.0-0.5
290B2:		
Warsaw	0-9	1.5-3.5
	9-28	0.5-1.5
	28-35	0.1-0.5
	35-60	0.0-0.5
293A:		
Andres	0-11	3.5-5.0
	11-26	0.5-1.5
	26-50	0.1-0.5
	50-60	0.0-0.5
294B:		
Symerton	0-15	2.5-4.0
	15-19	1.0-3.0
	19-35	0.1-1.0
	35-39	0.1-0.5
	39-60	0.0-0.5
318B2:		
Lorenzo	0-7	1.5-3.5
	7-14	0.5-1.5
	14-22	0.1-0.5
	22-60	0.0-0.5
322B2:		
Russell	0-6	1.0-2.5
	6-30	0.1-0.5
	30-46	0.1-0.5
	46-60	0.0-0.5
322C2:		
Russell	0-7	1.0-2.5
	7-27	0.1-0.5
	27-56	0.1-0.5
	56-72	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	Pct
327B2:		
Fox	0-6	1.0-2.5
	6-10	0.1-0.5
	10-21	0.1-0.5
	21-37	0.1-0.5
	37-60	0.0-0.5
327C2:		
Fox	0-8	1.0-2.5
	8-22	0.1-0.5
	22-28	0.1-0.5
	28-35	0.0-0.5
	35-60	0.0-0.5
330A:		
Peotone	0-28	4.5-7.0
	28-44	1.5-3.5
	44-60	0.1-1.0
343A:		
Kane	0-14	3.5-5.0
	14-17	0.5-1.5
	17-24	0.1-0.5
	24-35	0.1-0.5
	35-68	0.0-0.5
	68-80	0.0-0.5
481A:		
Raub	0-18	3.5-5.0
	18-32	0.5-1.5
	32-50	0.1-0.5
	50-60	0.0-0.5
496A:		
Fincastle	0-10	1.0-2.5
	10-14	0.1-1.0
	14-35	0.1-0.5
	35-43	0.1-0.5
	43-49	0.1-0.5
	49-60	0.0-0.5
533:		
Urban land.		
541B2:		
Graymont	0-8	2.5-3.5
	8-27	0.5-1.5
	27-39	0.1-0.5
	39-60	0.0-0.5
567A:		
Elkhart	0-14	2.5-4.0
	14-30	0.5-1.5
	30-35	0.1-0.5
	35-60	0.0-0.5
567B:		
Elkhart	0-10	2.5-4.0
	10-26	0.5-2.0
	26-77	0.0-0.1
	77-84	0.0-0.1

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
567B2:		
Elkhart	0-8	1.5-3.5
	8-26	0.5-1.5
	26-30	0.1-0.5
	30-60	0.0-0.5
570D2:		
Martinsville	0-6	1.0-2.5
	6-10	0.1-0.5
	10-18	0.1-0.5
	18-41	0.1-0.5
	41-60	0.0-0.5
614B:		
Chenoa	0-15	3.5-5.0
	15-28	0.5-1.5
	28-47	0.1-0.5
	47-60	0.0-0.5
614B2:		
Chenoa	0-8	1.5-3.5
	8-28	0.5-1.5
	28-56	0.5-1.5
	56-60	0.0-0.3
622B2:		
Wyanet	0-8	1.5-3.5
	8-16	0.5-1.5
	16-24	0.1-1.0
	24-32	0.1-0.5
	32-60	0.0-0.5
622C2:		
Wyanet	0-8	1.5-3.5
	8-26	0.5-1.5
	26-34	0.1-0.5
	34-60	0.0-0.5
663A:		
Clare	0-11	2.5-4.0
	11-16	0.5-1.5
	16-30	0.1-0.5
	30-44	0.1-0.5
	44-60	0.0-0.5
667A:		
Kaneville	0-7	1.5-3.5
	7-12	0.1-1.0
	12-36	0.1-0.5
	36-55	0.1-0.5
	55-60	0.0-0.5
667B:		
Kaneville	0-7	1.5-3.5
	7-11	0.5-1.0
	11-46	0.1-0.5
	46-50	0.1-0.5
	50-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--
Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
687B2:		
Penfield	0-8	1.5-3.5
	8-15	0.5-1.5
	15-30	0.1-0.5
	30-44	0.1-0.5
	44-53	0.1-0.5
	53-60	0.0-0.5
687C2:		
Penfield	0-7	1.5-3.5
	7-13	0.5-1.5
	13-37	0.1-0.5
	37-42	0.1-0.5
	42-60	0.0-0.5
715A:		
Arrowsmith	0-12	3.5-5.0
	12-30	0.5-1.5
	30-39	0.0-0.5
	39-60	0.0-0.5
721A:		
Drummer	0-14	4.5-7.0
	14-41	0.5-2.0
	41-47	0.2-0.5
	47-60	0.0-0.5
Elpaso	0-21	4.5-7.0
	21-44	0.5-1.5
	44-69	0.1-0.5
	69-80	0.0-0.5
802B:		
Orthents, loamy	0-10	0.5-2.0
	10-60	0.0-1.0
865:		
Pits, gravel.		
893B:		
Catlin	0-11	2.5-4.0
	11-16	1.5-3.5
	16-41	0.5-1.5
	41-45	0.1-0.5
	45-60	0.0-0.5
Saybrook	0-15	2.5-4.0
	15-32	0.5-1.5
	32-36	0.1-0.5
	36-60	0.0-0.5
902A:		
Ipava	0-10	3.5-5.0
	10-18	2.5-4.0
	18-31	0.5-1.5
	31-50	0.1-0.5
	50-60	0.0-0.5
Sable	0-23	4.5-6.0
	23-38	0.5-1.5
	38-47	0.1-0.5
	47-60	0.0-0.5

Table 19b.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Organic matter
	In	*Pct*
964D:		
Miami	0-4	1.0-2.5
	4-12	0.1-0.5
	12-28	0.1-0.5
	28-33	0.1-0.5
	33-60	0.0-0.5
Hennepin	0-5	1.0-2.5
	5-16	0.1-0.5
	16-60	0.0-0.5
964F:		
Miami	0-6	1.0-2.5
	6-11	0.1-1.0
	11-28	0.1-0.5
	28-47	0.1-0.5
	47-60	0.0-0.5
Hennepin	0-6	1.0-2.5
	6-19	0.1-0.5
	19-60	0.0-0.5
3107A:		
Sawmill	0-32	4.5-7.0
	32-58	1.5-3.5
	58-65	1.5-3.5
8073A:		
Ross	0-32	2.5-4.0
	32-39	0.5-1.5
	39-60	0.0-0.5
8074A:		
Radford	0-21	3.5-5.0
	21-29	1.5-3.5
	29-60	4.5-7.0
8077A:		
Huntsville	0-27	2.5-4.0
	27-52	1.5-3.5
	52-65	2.5-4.0
	65-80	1.5-3.5
8107A:		
Sawmill	0-26	2.0-7.0
	26-53	2.0-7.0
	53-60	1.0-3.0
8451A:		
Lawson	0-28	3.5-5.0
	28-60	0.5-1.5
8720A:		
Aetna	0-8	1.0-2.5
	8-22	0.1-0.5
	22-41	4.5-6.0
	41-60	0.5-1.5
MW:		
Miscellaneous water.		
W:		
Water.		

Table 20.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
17A:				
Keomah----------	0-11	5.1-7.3	10-26	0
	11-18	5.1-7.3	9.0-24	0
	18-33	5.1-6.5	28-41	0
	33-51	5.6-7.3	16-29	0
	51-89	6.1-7.3	8.0-18	0-15
27B2:				
Miami-----------	0-9	6.1-7.3	14-27	0
	9-21	5.6-7.3	12-24	0
	21-33	5.6-7.3	11-22	0-5
	33-60	7.4-8.4	4.0-13	15-40
27C2:				
Miami-----------	0-7	6.1-7.3	14-27	0
	7-11	5.6-7.3	12-24	0
	11-23	5.6-7.3	11-22	0
	23-36	5.6-7.8	9.0-19	0-5
	36-60	7.4-8.4	4.0-13	15-40
27D2:				
Miami-----------	0-4	6.1-7.3	14-27	0
	4-12	5.6-7.3	12-24	0
	12-28	5.6-7.3	12-24	0
	28-33	6.6-7.8	12-24	0-10
	33-60	7.4-8.4	4.0-13	15-40
43A:				
Ipava-----------	0-10	5.6-7.3	16-32	0
	10-18	5.6-7.3	25-38	0
	18-31	5.6-7.3	22-39	0
	31-50	6.6-7.8	17-31	0-5
	50-60	7.4-8.4	9.0-22	0-15
51A:				
Muscatune-------	0-16	6.1-7.3	16-32	0
	16-22	5.6-7.3	16-27	0
	22-46	5.6-7.3	17-31	0
	46-60	6.6-7.8	9.0-22	0-15
56B2:				
Dana------------	0-7	5.6-6.5	14-28	0
	7-34	5.6-7.3	18-27	0
	34-53	6.1-7.3	12-24	0-5
	53-60	7.4-8.4	4.0-16	15-40
56C2:				
Dana------------	0-8	6.1-7.3	20-35	0
	8-32	5.6-7.3	18-27	0
	32-47	6.1-7.8	12-24	0-5
	47-60	7.4-8.4	4.0-16	15-40
59A:				
Lisbon----------	0-11	5.6-6.5	16-32	0
	11-14	5.6-7.3	25-38	0
	14-25	5.6-7.3	18-27	0
	25-32	6.6-7.8	11-22	0-5
	32-60	7.4-8.4	4.0-16	15-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
60B2:				
La Rose---------	0-7	6.1-7.3	10-22	0
	7-15	6.6-7.8	11-22	0-5
	15-60	7.4-8.4	4.0-13	15-40
60C2:				
La Rose---------	0-7	6.1-7.3	10-22	0
	7-19	6.6-7.8	11-22	0-5
	19-60	7.4-8.4	4.0-13	15-40
60D2:				
La Rose---------	0-7	6.1-7.3	10-22	0
	7-12	6.6-7.8	11-22	0-5
	12-60	7.4-8.4	4.0-13	15-40
61A:				
Atterberry------	0-9	6.1-7.3	11-28	0
	9-17	5.6-6.5	9.0-24	0
	17-48	5.1-6.0	16-29	0
	48-60	5.6-7.3	9.0-23	0-8
67A:				
Harpster--------	0-18	7.9-8.4	27-40	15-40
	18-41	7.4-8.4	18-27	5-40
	41-56	7.9-8.4	9.0-23	5-40
	56-60	7.9-8.4	4.0-16	10-40
68A:				
Sable-----------	0-23	5.6-6.5	27-40	0
	23-38	6.1-7.3	17-31	0
	38-47	6.6-7.8	10-25	0-5
	47-60	7.4-8.4	9.0-23	0-15
86A:				
Osco------------	0-13	5.1-7.3	14-30	0
	13-38	5.1-6.0	17-31	0
	38-44	5.1-6.5	10-25	0
	44-60	6.6-7.8	9.0-22	0-15
86B:				
Osco------------	0-14	5.1-7.3	18-25	0
	14-55	5.1-7.3	15-23	0
	55-60	5.6-7.3	12-18	0-15
86B2:				
Osco------------	0-8	5.1-7.3	14-28	0
	8-42	5.1-6.0	17-31	0
	42-51	5.1-6.5	10-25	0
	51-60	5.6-7.8	9.0-22	0-15
91B2:				
Swygert---------	0-7	6.1-7.3	30-36	0
	7-30	6.1-7.3	17-38	0
	30-48	7.4-8.4	17-38	0-15
	48-60	7.4-8.4	17-38	15-40
125A:				
Selma-----------	0-23	6.1-7.3	16-30	0
	23-28	6.1-7.3	9.0-19	0
	28-41	6.1-7.3	6.0-18	0
	41-53	6.6-7.8	3.0-14	0-5
	53-60	7.4-8.4	2.0-10	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	pH	meq/100 g	Pct
134B2:				
Camden----------	0-8	5.1-7.3	11-29	0
	8-31	5.1-6.5	15-29	0
	31-41	5.1-6.0	9.0-19	0
	41-50	6.1-7.3	12-24	0-5
	50-60	6.6-7.8	6.0-15	0-15
134C2:				
Camden----------	0-7	5.1-7.3	11-29	0
	7-34	5.1-7.3	15-29	0
	34-43	5.1-7.3	9.0-20	0
	43-80	6.1-7.8	2.0-10	0-25
145B:				
Saybrook--------	0-15	5.6-7.3	14-30	0
	15-32	5.6-7.3	18-27	0
	32-36	6.6-7.8	11-22	0-5
	36-60	7.4-8.4	4.0-16	15-40
145B2:				
Saybrook--------	0-8	5.6-7.3	14-28	0
	8-28	5.1-7.3	17-23	0
	28-31	6.6-7.8	11-22	0-5
	31-60	7.4-8.4	4.0-16	15-40
145C2:				
Saybrook--------	0-9	5.6-7.3	14-28	0
	9-30	5.1-7.3	17-23	0
	30-36	6.6-7.8	11-22	0-5
	36-60	7.4-8.4	4.0-16	15-40
146A:				
Elliott---------	0-6	5.6-7.3	16-32	0
	6-11	5.6-7.3	27-40	0
	11-16	6.1-7.3	17-38	0
	16-41	6.6-7.8	13-24	0-15
	41-60	7.4-8.4	11-22	10-35
148B2:				
Proctor---------	0-13	5.6-6.5	14-28	0
	13-32	5.6-7.3	18-27	0
	32-49	6.1-7.3	9.0-19	0-10
	49-60	6.1-7.8	6.0-15	0-15
148C2:				
Proctor---------	0-13	5.6-6.5	14-28	0
	13-36	5.6-7.3	18-27	0
	36-46	6.1-7.3	8.0-19	0
	46-60	6.1-7.8	3.0-13	0-15
149A:				
Brenton---------	0-14	5.6-6.5	16-32	0
	14-33	5.6-6.5	18-27	0
	33-45	6.1-7.3	5.0-16	0
	45-54	6.6-7.8	9.0-19	0-5
	54-80	6.6-7.8	3.0-16	0-15
152A:				
Drummer---------	0-14	5.6-7.3	27-40	0
	14-41	6.1-7.3	17-31	0
	41-47	6.6-7.8	9.0-19	0-5
	47-60	7.4-8.4	4.0-13	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
154A:				
Flanagan--------	0-18	5.6-6.5	16-32	0
	18-38	5.6-6.5	22-35	0
	38-45	6.1-6.5	16-27	0
	45-49	6.6-7.8	6.0-18	0-10
	49-60	7.4-8.4	4.0-16	10-40
171B:				
Catlin----------	0-11	6.1-7.3	14-30	0
	11-16	6.1-7.3	23-36	0
	16-41	6.1-7.3	17-31	0
	41-45	7.4-8.4	11-22	0-5
	45-60	7.4-8.4	4.0-16	15-40
171B2:				
Catlin----------	0-8	6.1-7.3	14-28	0
	8-34	6.1-7.3	17-31	0
	34-43	6.1-7.3	10-25	0
	43-60	7.4-8.4	4.0-16	15-40
171C2:				
Catlin----------	0-9	6.1-7.3	14-28	0
	9-40	5.6-6.5	17-31	0
	40-50	6.1-7.3	16-27	0
	50-55	6.6-7.8	11-22	0-5
	55-60	7.4-8.4	10-22	15-40
193B2:				
Mayville--------	0-6	5.6-7.3	13-24	0
	6-8	5.1-7.3	9.0-24	0
	8-27	5.6-7.3	16-29	0
	27-34	5.6-7.3	11-22	0-5
	34-60	7.4-8.4	4.0-16	15-40
193C2:				
Mayville--------	0-6	5.6-7.3	13-24	0
	6-24	5.1-7.3	16-29	0
	24-29	5.6-7.3	11-22	0-5
	29-60	7.4-8.4	4.0-16	15-40
198A:				
Elburn----------	0-16	6.1-7.3	16-32	0
	16-49	5.6-7.3	17-31	0
	49-58	6.6-7.8	2.0-10	0-5
	58-62	6.6-7.8	2.0-10	0-15
199A:				
Plano-----------	0-14	6.1-7.3	17-26	0
	14-49	5.1-7.3	15-30	0
	49-60	5.6-7.8	9.0-20	0
	60-72	5.6-8.4	6.0-13	0-20
199B:				
Plano-----------	0-15	6.1-7.3	17-26	0
	15-45	5.1-7.3	15-30	0
	45-55	5.6-7.8	9.0-20	0
	55-72	5.6-8.4	6.0-13	0-20

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
199B2:				
Plano-----------	0-9	6.1-7.3	14-28	0
	9-46	5.6-7.3	17-31	0
	46-53	6.6-7.8	9.0-19	0-5
	53-60	6.6-7.8	3.0-15	0-15
213A:				
Normal----------	0-11	5.6-6.5	11-29	0
	11-20	5.1-6.0	9.0-24	0
	20-37	5.1-6.0	17-31	0
	37-52	5.1-6.5	10-25	0
	52-75	5.1-6.5	9.0-23	0
	75-80	5.6-7.3	4.0-13	0
223B2:				
Varna-----------	0-12	5.6-7.3	10-22	0
	12-27	5.6-7.3	15-30	0
	27-39	7.4-8.4	13-24	0-15
	39-60	7.4-8.4	11-22	15-25
223C2:				
Varna-----------	0-8	5.6-7.3	23-36	0
	8-27	5.6-7.3	15-30	0
	27-34	7.4-8.4	13-24	0-15
	34-60	7.4-8.4	11-22	15-25
224C2:				
Strawn----------	0-4	6.1-7.3	7.0-27	0
	4-18	6.6-7.8	11-22	0-5
	18-24	7.4-8.4	9.0-19	0-5
	24-60	7.4-8.4	4.0-16	15-40
224G:				
Strawn----------	0-2	6.1-7.3	7.0-27	0
	2-5	6.1-7.3	4.0-19	0
	5-23	6.6-7.8	11-22	0-5
	23-60	7.4-8.4	4.0-16	15-40
232A:				
Ashkum----------	0-12	5.6-7.3	22-38	0
	12-29	6.1-7.3	22-39	0-5
	29-54	6.6-7.8	13-24	0-15
	54-60	7.4-8.4	11-22	10-25
233B:				
Birkbeck--------	0-4	5.6-7.3	13-24	0
	4-9	5.6-6.5	9.0-24	0
	9-54	5.6-7.3	16-29	0
	54-60	6.1-7.8	9.0-19	0-5
	60-68	7.4-8.4	4.0-16	15-40
233B2:				
Birkbeck--------	0-9	5.6-7.3	13-24	0
	9-48	5.6-7.3	16-29	0
	48-55	6.6-7.8	9.0-19	0-5
	55-60	7.4-8.4	4.0-16	15-40
233C2:				
Birkbeck--------	0-7	5.6-7.3	13-24	0
	7-46	5.6-7.3	16-29	0
	46-57	6.1-7.8	9.0-19	0-5
	57-60	7.4-8.4	4.0-16	15-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
236A:				
Sabina----------	0-7	6.1-7.3	11-29	0
	7-18	5.1-6.0	9.0-24	0
	18-30	5.6-6.5	21-33	0
	30-45	6.1-7.3	15-25	0-5
	45-51	6.6-7.8	9.0-19	0-5
	51-60	7.4-8.4	4.0-16	15-40
244A:				
Hartsburg-------	0-17	6.1-7.3	27-40	0-5
	17-34	6.6-8.4	17-31	0-25
	34-60	7.4-8.4	9.0-23	15-40
272A:				
Edgington-------	0-20	5.1-6.5	18-34	0
	20-31	5.1-6.0	9.0-24	0
	31-55	5.1-6.0	17-31	0
	55-60	6.1-7.8	9.0-22	0-15
279B2:				
Rozetta---------	0-6	5.6-6.5	13-24	0
	6-53	5.6-7.3	16-29	0
	53-60	6.6-7.8	8.0-18	0-15
290A:				
Warsaw----------	0-14	6.1-7.3	14-33	0
	14-26	5.6-6.5	9.0-19	0
	26-35	6.1-7.3	11-24	0-5
	35-60	7.4-8.4	0.0-2.0	15-25
290B2:				
Warsaw----------	0-9	6.1-7.3	14-33	0
	9-28	5.6-6.5	8.0-22	0
	28-35	6.6-7.8	4.0-13	0-5
	35-60	7.4-8.4	0.0-2.0	15-25
293A:				
Andres----------	0-11	5.6-7.3	10-22	0
	11-26	6.1-7.8	11-22	0-5
	26-50	6.6-8.4	13-24	0-15
	50-60	7.4-8.4	11-22	15-30
294B:				
Symerton--------	0-15	5.6-7.3	10-22	0
	15-19	5.6-7.3	15-27	0
	19-35	5.6-7.8	8.0-22	0-5
	35-39	7.4-8.4	9.0-23	0-15
	39-60	7.4-8.4	9.0-23	5-30
318B2:				
Lorenzo---------	0-7	5.6-6.5	10-22	---
	7-14	5.6-6.5	11-22	---
	14-22	5.6-7.3	9.0-24	0-5
	22-60	6.6-7.8	0.0-4.0	5-25
322B2:				
Russell---------	0-6	5.6-6.5	13-24	0
	6-30	4.5-5.5	16-29	0
	30-46	5.6-7.3	11-22	0-5
	46-60	7.4-8.4	4.0-16	15-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
322C2:				
Russell	0-7	5.6-6.5	13-24	0
	7-27	4.5-5.5	16-29	0
	27-56	5.6-7.3	11-22	0-5
	56-72	7.4-8.4	4.0-16	15-40
327B2:				
Fox	0-6	5.6-6.5	6.0-18	0
	6-10	5.6-6.5	9.0-18	0
	10-21	5.6-6.5	12-24	0
	21-37	6.1-7.3	9.0-24	0-5
	37-60	7.4-8.4	0.0-2.0	5-25
327C2:				
Fox	0-8	5.6-6.5	6.0-18	0
	8-22	5.6-6.5	12-24	0
	22-28	5.6-6.5	9.0-24	0
	28-35	6.1-7.8	12-14	0-5
	35-60	7.4-8.4	0.0-2.0	5-25
330A:				
Peotone	0-28	6.1-7.3	30-38	0
	28-44	6.1-7.3	29-43	0
	44-60	6.6-7.8	15-35	0-15
343A:				
Kane	0-14	5.6-6.5	13-26	0
	14-17	5.6-6.5	9.0-19	0
	17-24	5.6-6.5	11-22	0
	24-35	5.6-6.5	9.0-24	0
	35-68	6.6-7.8	0.0-2.0	0-5
	68-80	7.4-7.8	0.0-6.0	0-20
481A:				
Raub	0-18	5.6-6.5	16-32	0
	18-32	5.6-6.5	18-27	0
	32-50	6.6-7.8	12-24	0-5
	50-60	7.4-8.4	4.0-16	15-40
496A:				
Fincastle	0-10	5.6-6.5	10-26	0
	10-14	5.1-6.0	9.0-23	0
	14-35	5.1-6.0	16-29	0
	35-43	5.6-6.5	12-24	0
	43-49	7.4-8.4	12-24	0-5
	49-60	7.4-8.4	4.0-16	15-40
533:				
Urban land.				
541B2:				
Graymont	0-8	6.1-7.3	14-30	0
	8-27	6.1-7.3	18-27	0
	27-39	6.6-7.8	12-24	5-15
	39-60	7.4-8.4	9.0-22	15-40
567A:				
Elkhart	0-14	5.6-7.3	14-30	0
	14-30	5.6-7.8	17-31	0-5
	30-35	7.4-8.4	10-25	0-25
	35-60	7.9-8.4	9.0-23	15-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
567B:				
Elkhart---------	0-10	5.6-7.3	14-30	0
	10-26	5.6-7.8	17-31	0-5
	26-77	7.4-8.4	10-25	0-25
	77-84	7.9-8.4	9.0-23	15-40
567B2:				
Elkhart---------	0-8	5.6-7.3	14-30	0
	8-26	5.6-7.8	17-31	0-5
	26-30	7.4-8.4	10-25	0-25
	30-60	7.9-8.4	9.0-23	15-40
570D2:				
Martinsville----	0-6	5.6-7.3	11-27	0
	6-10	5.6-6.5	8.0-18	0
	10-18	5.6-6.5	9.0-19	0
	18-41	5.6-6.5	12-22	0
	41-60	6.1-7.8	8.0-22	0-15
614B:				
Chenoa----------	0-15	6.1-7.3	27-40	0
	15-28	5.6-7.3	22-35	0
	28-47	6.6-8.4	13-24	0-15
	47-60	7.4-8.4	11-22	15-30
614B2:				
Chenoa----------	0-8	6.1-7.3	20-35	0
	8-28	5.6-7.3	22-35	0
	28-56	7.4-8.4	13-24	0-15
	56-60	7.9-8.4	11-22	15-40
622B2:				
Wyanet----------	0-8	5.6-6.5	10-22	0
	8-16	5.6-6.5	12-24	0
	16-24	6.1-7.3	12-24	0
	24-32	7.4-8.4	9.0-19	0-15
	32-60	7.9-8.4	4.0-16	15-40
622C2:				
Wyanet----------	0-8	5.6-6.5	10-22	0
	8-26	6.1-7.3	12-24	0
	26-34	7.4-8.4	9.0-19	0-5
	34-60	7.9-8.4	4.0-16	15-40
663A:				
Clare-----------	0-11	6.1-7.3	14-30	0
	11-16	5.6-6.5	10-25	0
	16-30	5.6-6.5	18-27	0
	30-44	6.1-7.3	11-22	0-5
	44-60	7.4-8.4	4.0-13	0-15
667A:				
Kaneville-------	0-7	5.6-6.5	11-28	0
	7-12	6.1-7.3	9.0-23	0
	12-36	5.6-7.3	16-29	0
	36-55	5.6-7.3	9.0-23	0-5
	55-60	5.6-7.3	4.0-13	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
667B:				
Kaneville-------	0-7	5.6-6.5	11-28	0
	7-11	6.1-7.3	9.0-24	0
	11-46	5.6-7.3	16-29	0
	46-50	5.6-6.5	9.0-19	0-5
	50-60	5.6-7.3	4.0-13	0-15
687B2:				
Penfield--------	0-8	6.1-7.3	10-24	0
	8-15	6.1-7.3	8.0-17	0
	15-30	6.1-7.3	8.0-21	0
	30-44	6.1-7.3	4.0-13	0
	44-53	6.1-7.3	4.0-12	0-5
	53-60	7.4-8.4	2.0-12	0-15
687C2:				
Penfield--------	0-7	6.1-7.8	14-33	0
	7-13	6.1-7.3	9.0-19	0
	13-37	6.1-7.3	11-22	0
	37-42	6.1-7.3	4.0-13	0-5
	42-60	6.6-7.8	1.0-7.0	0-15
715A:				
Arrowsmith------	0-12	6.1-7.3	16-32	0
	12-30	6.1-7.8	17-31	0-10
	30-39	7.4-8.4	9.0-22	5-30
	39-60	7.9-8.4	5.0-20	15-35
721A:				
Drummer---------	0-14	5.6-7.3	27-40	0
	14-41	6.1-7.3	17-31	0
	41-47	6.6-7.8	9.0-19	0-5
	47-60	7.4-8.4	4.0-13	0-15
Elpaso----------	0-21	5.6-7.3	27-40	0
	21-44	6.1-7.3	17-31	0
	44-69	6.6-7.8	9.0-23	0-15
	69-80	6.6-8.4	4.0-16	15-25
802B:				
Orthents, loamy	0-10	5.6-7.3	14-22	0-10
	10-60	5.6-7.8	11-17	0-20
865:				
Pits, gravel.				
893B:				
Catlin----------	0-11	6.1-7.3	14-30	0
	11-16	6.1-7.3	23-36	0
	16-41	6.1-7.3	17-31	0
	41-45	7.4-8.4	11-22	0-15
	45-60	7.4-8.4	4.0-16	15-40
Saybrook--------	0-15	5.6-7.3	14-30	0
	15-32	5.6-7.3	18-27	0
	32-36	6.6-7.8	11-22	0-15
	36-60	7.4-8.4	4.0-16	15-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
902A:				
Ipava-----------	0-10	5.6-7.3	16-32	0
	10-18	5.6-7.3	25-38	0
	18-31	5.6-6.5	22-39	0
	31-50	6.6-7.8	17-31	0-5
	50-60	7.4-8.4	9.0-22	0-15
Sable-----------	0-23	5.6-6.5	27-40	0
	23-38	6.1-7.3	17-31	0
	38-47	6.6-7.8	10-25	0-5
	47-60	7.4-8.4	9.0-23	0-15
964D:				
Miami-----------	0-4	6.1-7.3	14-27	0
	4-12	5.6-6.5	12-24	0
	12-28	5.6-7.3	12-24	0
	28-33	6.6-7.8	12-24	0-5
	33-60	7.9-8.4	4.0-13	15-40
Hennepin--------	0-5	6.6-7.8	17-32	0-5
	5-16	7.4-8.4	11-22	0-15
	16-60	7.9-8.4	4.0-16	15-40
964F:				
Miami-----------	0-6	6.1-7.3	7.0-27	0
	6-11	5.6-7.3	4.0-19	0
	11-28	5.6-7.8	11-22	0-5
	28-47	7.4-8.4	4.0-13	15-40
	47-60	7.4-8.4	4.0-13	15-40
Hennepin--------	0-6	6.6-7.8	14-27	0-5
	6-19	7.4-8.4	9.0-19	0-15
	19-60	7.9-8.4	4.0-16	15-40
3107A:				
Sawmill---------	0-32	6.1-7.3	23-36	0
	32-58	6.6-7.8	18-34	0
	58-65	6.6-8.4	18-34	0-5
8073A:				
Ross------------	0-32	6.6-7.8	12-26	---
	32-39	6.6-7.8	6.0-18	0-5
	39-60	7.4-8.4	4.0-16	0-15
8074A:				
Radford---------	0-21	5.6-6.5	14-30	0
	21-29	6.1-7.3	10-26	0
	29-60	6.1-7.3	23-36	0
8077A:				
Huntsville------	0-27	6.1-7.3	14-30	0
	27-52	6.1-7.3	12-28	0
	52-65	6.1-7.3	14-30	0
	65-80	6.6-7.8	9.0-23	0-5
8107A:				
Sawmill---------	0-26	6.1-7.8	23-36	0
	26-53	6.1-7.8	18-34	0-5
	53-60	6.1-7.8	18-34	0-30

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate equivalint
	In	*pH*	*meq/100 g*	*Pct*
8451A:				
Lawson----------	0-28	6.1-7.3	16-32	0
	28-60	6.1-7.3	10-25	0
8720A:				
Aetna-----------	0-8	6.1-7.3	10-26	0
	8-22	6.1-7.3	15-25	0
	22-41	6.6-7.8	27-40	0-5
	41-60	6.6-7.8	18-30	0-5
MW:				
Miscellaneous water.				
W:				
Water.				

Table 21.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*		*Ft*				
17A:										
Keomah	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
27B2:										
Miami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
27C2:										
Miami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
27D2:										
Miami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
43A:										
Ipava	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
51A:										
Muscatune	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
56B2:										
Dana	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.3-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
56C2:										
Dana	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.3-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
59A:										
Lisbon	B	Jan-May	1.0-2.0	2.0-3.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
60B2:										
La Rose	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	---
60C2:										
La Rose	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	---
60D2:										
La Rose	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	---
61A:										
Atterberry	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
67A:										
Harpster	B	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
68A:										
Sable	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
86A:										
Osco	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
86B:										
Osco	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
86B2:										
Osco	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-4.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
91B2:										
Swygert	C	Jan-May	1.0-2.0	2.9-4.6	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
125A:										
Selma	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
134B2:										
Camden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
134C2:										
Camden	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
145B:										
Saybrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.3	2.1-3.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
145B2:										
Saybrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.3	2.1-3.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
145C2:										
Saybrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.3	2.1-3.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
146A:										
Elliott	C	Jan-May	1.0-2.0	1.7-4.3	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
148B2:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
148C2:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*		*Ft*				
149A:										
Brenton	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
152A:										
Drummer	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
154A:										
Flanagan	B	Jan-May	1.0-2.0	3.7-5.4	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
171B:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.7-5.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
171B2:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	1.5-3.5	3.7-5.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
171C2:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.7-5.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
193B2:										
Mayville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.7	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
193C2:										
Mayville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.7	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
198A:										
Elburn	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
199A:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
199B:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
199B2:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
213A:										
Normal	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
223B2:										
Varna	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
223C2:										
Varna	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-5.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
224C2:										
Strawn	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
224G:										
Strawn	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
232A:										
Ashkum	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
233B:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.3-5.8	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
233B2:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.3-5.8	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
233C2:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.3-5.8	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
236A:										
Sabina	C	Jan-May	1.0-2.0	3.3-5.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
244A:										
Hartsburg	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
272A:										
Edgington	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
279B2:										
Rozetta	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-4.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
290A:										
Warsaw	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
290B2:										
Warsaw	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
293A:										
Andres	C	Jan-May	1.0-2.0	3.0-5.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
294B:										
Symerton	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.5-4.7	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
318B2:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
322B2:										
Russell	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
322C2:										
Russell	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327B2:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
327C2:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
330A:										
Peotone	C/D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
343A:										
Kane	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
481A:										
Raub	B	Jan-May	1.0-2.0	3.3-5.8	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
496A:										
Fincastle	C	Jan-May	0.5-2.0	3.3-5.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
533:										
Urban land	---	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
541B2:										
Graymont	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	1.5-3.5	2.1-3.7	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
567A:										
Elkhart	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-4.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
567B:										
Elkhart	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-4.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
567B2:										
Elkhart	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-4.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
570D2:										
Martinsville	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
614B:										
Chenoa	C	Jan-May	1.0-2.0	2.1-4.3	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*		*Ft*				
614B2:										
Chenoa	C	Jan-May	1.0-2.0	2.1-3.7	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
622B2:										
Wyanet	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
622C2:										
Wyanet	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
663A:										
Clare	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
667A:										
Kaneville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
667B:										
Kaneville	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
687B2:										
Penfield	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	3.5-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
687C2:										
Penfield	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	3.5-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
715A:										
Arrowsmith	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
721A:										
Drummer	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Elpaso	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
802B:										
Orthents, loamy	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	3.3-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
865:										
Pits, gravel	---	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
893B:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.7-5.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*		*Ft*				
893B:										
Saybrook	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.3	2.1-3.4	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
902A:										
Ipava	C/D	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Sable	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
964D:										
Miami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
Hennepin	B	---	>6.0	>6.0	---	---	---	---	---	---
964F:										
Miami	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.1-3.6	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
Hennepin	B	---	>6.0	>6.0	---	---	---	---	---	---
3107A:										
Sawmill	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
8073A:										
Ross	B	Jan-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
8074A:										
Radford	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
8077A:										
Huntsville	B	Jan	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Feb-Apr	3.5-6.5	>6.0	Apparent	---	---	---	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
8107A:										
Sawmill	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
8451A:										
Lawson	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*		*Ft*				
8720A:										
Aetna-----------------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Occasional
MW:										
Miscellaneous water.										
W:										
Water.										

Table 22.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
17A:							
Keomah	---	---	---	---	High	High	Moderate
27B2:							
Miami	Dense material	24-40	---	Noncemented	Moderate	High	Moderate
27C2:							
Miami	Dense material	24-40	---	Noncemented	Moderate	High	Low
27D2:							
Miami	Dense material	24-40	---	Noncemented	Moderate	High	Moderate
43A:							
Ipava	---	---	---	---	High	High	Moderate
51A:							
Muscatune	---	---	---	---	High	High	Moderate
56B2:							
Dana	Dense material	40-60	---	Noncemented	High	High	Moderate
56C2:							
Dana	Dense material	40-60	---	Noncemented	High	High	Low
59A:							
Lisbon	Dense material	24-42	---	Noncemented	High	High	Low
60B2:							
La Rose	Dense material	10-24	---	Noncemented	Moderate	Moderate	Low
60C2:							
La Rose	Dense material	10-24	---	Noncemented	Moderate	Moderate	Low
60D2:							
La Rose	Dense material	10-24	---	Noncemented	Moderate	Moderate	Low
61A:							
Atterberry	---	---	---	---	High	High	Moderate
67A:							
Harpster	---	---	---	---	High	High	Low
68A:							
Sable	---	---	---	---	High	High	Moderate
86A:							
Osco	---	---	---	---	High	Moderate	Moderate
86B:							
Osco	---	---	---	---	High	Moderate	Moderate
86B2:							
Osco	---	---	---	---	High	High	Moderate
91B2:							
Swygert	Dense material	35-55	---	Noncemented	Moderate	High	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
125A:							
Selma	---	---	---	---	High	High	Low
134B2:							
Camden	---	---	---	---	High	Moderate	Moderate
134C2:							
Camden	---	---	---	---	High	Moderate	Moderate
145B:							
Saybrook	Dense material	24-40	---	Noncemented	High	High	Moderate
145B2:							
Saybrook	Dense material	24-40	---	Noncemented	High	High	Moderate
145C2:							
Saybrook	Dense material	24-40	---	Noncemented	High	High	Low
146A:							
Elliott	Dense material	20-45	---	---	Moderate	High	Moderate
148B2:							
Proctor	---	---	---	---	High	Moderate	Low
148C2:							
Proctor	---	---	---	---	High	High	Moderate
149A:							
Brenton	---	---	---	---	High	High	Moderate
152A:							
Drummer	---	---	---	---	High	High	Moderate
154A:							
Flanagan	Dense material	45-65	---	Noncemented	Moderate	High	Moderate
171B:							
Catlin	Dense material	45-65	---	Noncemented	High	High	Low
171B2:							
Catlin	Dense material	45-65	---	Noncemented	High	High	Low
171C2:							
Catlin	Dense material	45-65	---	Noncemented	High	High	Moderate
193B2:							
Mayville	Dense material	24-44	---	Noncemented	High	High	Moderate
193C2:							
Mayville	Dense material	24-44	---	Noncemented	High	High	Moderate
198A:							
Elburn	---	---	---	---	High	High	Low
199A:							
Plano	---	---	---	---	High	Moderate	Low
199B:							
Plano	---	---	---	---	High	Moderate	Low
199B2:							
Plano	---	---	---	---	High	Moderate	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	*In*				
213A:							
Normal	---	---	---	---	High	High	Moderate
223B2:							
Varna	Dense material	24-60	---	Noncemented	Moderate	High	Low
223C2:							
Varna	Dense material	24-60	---	Noncemented	Moderate	High	Moderate
224C2:							
Strawn	Dense material	16-24	---	Noncemented	Moderate	Moderate	Low
224G:							
Strawn	Dense material	16-24	---	Noncemented	Moderate	Moderate	Low
232A:							
Ashkum	---	---	---	---	High	High	Low
233B:							
Birkbeck	Dense material	40-70	---	Noncemented	High	High	Moderate
233B2:							
Birkbeck	Dense material	40-70	---	Noncemented	High	High	Moderate
233C2:							
Birkbeck	Dense material	40-70	---	Noncemented	High	High	Moderate
236A:							
Sabina	Dense material	44-80	---	Noncemented	Moderate	High	Moderate
244A:							
Hartsburg	---	---	---	---	High	High	Low
272A:							
Edgington	---	---	---	---	High	High	Moderate
279B2:							
Rozetta	---	---	---	---	High	High	Moderate
290A:							
Warsaw	Strongly contrasting textural stratification	24-40	---	Noncemented	Moderate	Moderate	Moderate
290B2:							
Warsaw	Strongly contrasting textural stratification	24-40	---	Noncemented	Moderate	Moderate	Moderate
293A:							
Andres	---	---	---	---	Moderate	High	Low
294B:							
Symerton	---	---	---	---	Moderate	High	Moderate
318B2:							
Lorenzo	Strongly contrasting textural stratification	12-24	---	Noncemented	Moderate	Moderate	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Depth to top	Thickness	Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
322B2:							
Russell	Dense material	40-60	---	Noncemented	High	Moderate	Moderate
322C2:							
Russell	Dense material	40-60	---	Noncemented	High	Moderate	High
327B2:							
Fox	Strongly contrasting textural stratification	20-40	---	Noncemented	Moderate	Moderate	Moderate
327C2:							
Fox	Strongly contrasting textural stratification	20-40	---	Noncemented	Moderate	Moderate	Moderate
330A:							
Peotone	---	---	---	---	High	Moderate	Low
343A:							
Kane	Strongly contrasting textural stratification	20-40	---	Noncemented	Moderate	High	Moderate
481A:							
Raub	Dense material	40-70	---	Noncemented	High	High	Moderate
496A:							
Fincastle	Dense material	40-60	---	Noncemented	High	High	Moderate
533:							
Urban land.							
541B2:							
Graymont	Dense material	24-45	---	Noncemented	High	High	Low
567A:							
Elkhart	---	---	---	---	High	High	Moderate
567B:							
Elkhart	---	---	---	---	High	High	Low
567B2:							
Elkhart	---	---	---	---	High	High	Moderate
570D2:							
Martinsville	---	---	---	---	Moderate	Moderate	Moderate
614B:							
Chenoa	---	---	---	---	Moderate	High	Moderate
614B2:							
Chenoa	Dense material	45-60	---	Noncemented	Moderate	High	Low
622B2:							
Wyanet	Dense material	24-40	---	Noncemented	Moderate	Moderate	Low
622C2:							
Wyanet	Dense material	24-40	---	Noncemented	Moderate	Moderate	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
663A:							
Clare	---	---	---	---	High	High	Low
667A:							
Kaneville	---	---	---	---	High	High	Moderate
667B:							
Kaneville	---	---	---	---	High	High	Moderate
687B2:							
Penfield	---	---	---	---	Moderate	Moderate	Low
687C2:							
Penfield	---	---	---	---	Moderate	Moderate	Low
715A:							
Arrowsmith	---	---	---	---	High	High	Low
721A:							
Drummer	---	---	---	---	High	High	Moderate
Elpaso	---	---	---	---	High	High	Moderate
802B:							
Orthents, loamy	---	---	---	---	Moderate	High	Moderate
865:							
Pits, gravel.							
893B:							
Catlin	Dense material	45-65	---	Noncemented	High	High	Low
Saybrook	Dense material	24-40	---	Noncemented	High	High	Moderate
902A:							
Ipava	---	---	---	---	Moderate	High	Moderate
Sable	---	---	---	---	High	High	Moderate
964D:							
Miami	Dense material	24-40	---	Noncemented	Moderate	High	Moderate
Hennepin	Dense material	10-20	---	Noncemented	Moderate	Moderate	Low
964F:							
Miami	Dense material	24-40	---	Noncemented	Moderate	High	Moderate
Hennepin	Dense material	10-20	---	Noncemented	Moderate	Low	Low
3107A:							
Sawmill	---	---	---	---	High	High	Low
8073A:							
Ross	---	---	---	---	Moderate	Low	Low
8074A:							
Radford	---	---	---	---	High	High	Moderate
8077A:							
Huntsville	---	---	---	---	High	Moderate	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
8107A:							
Sawmill	---	---	---	---	High	High	Low
8451A:							
Lawson	---	---	---	---	High	Moderate	Low
8720A:							
Aetna	---	---	---	---	High	High	Low
MW:							
Miscellaneous water.							
W:							
Water.							

Table 23.--Engineering Index Test Data

(MAX means maximum dry density; OPT, optimum moisture; LL, liquid limit; PI, plasticity index; and UN, Unified.)

Soil name and location	Sample number	Horizon	Depth	Moisture density		Percentage passing sieve--				LL	PI	Classification	
				MAX	OPT	No. 4	No. 10	No. 40	No. 200			AASHTO	UN
			In										
Catlin silt loam:	86IL-113-53-1	Ap	0-11	105	18	100	100	99	98	36	13	A-6	CL
330 feet east and 70 feet south of	86IL-113-53-3	Bt1	16-26	101	19	100	100	100	99	41	17	A-7-6	CL
the northwest corner of sec. 11, T.	86IL-113-53-6	2C	45-60	121	14	98	95	91	78	27	12	A-6	CL
23 N., R. 1 E.													
Chenoa silt loam:	87IL-113-6-1	Ap	0-12	104	19	100	99	96	90	35	13	A-6	CL
2,409 feet west and 75 feet north	87IL-113-6-3	Bt1	17-24	100	21	99	98	98	93	49	28	A-7-6	CL
of the southeast corner of sec. 14,	87IL-113-6-5	2BC	31-40	112	16	99	98	96	88	31	13	A-6	CL
T. 26 N., R. 5 E.	87IL-113-6-6	2C	40-60	133	14	96	95	92	85	29	11	A-6	CL
Elkhart silt loam:	89IL-113-36-1	Ap	0-8	101	20	100	100	99	96	38	14	A-6	CL
726 feet north and 528 feet west of	89IL-113-36-4	Bt1	18-25	102	20	100	100	100	99	46	24	A-7-6	CL
the southeast corner of sec. 20, T.	89IL-113-36-7	C	35-60	114	15	99	98	98	97	28	7	A-4	CL
22 N., R. 3 E.													
Arrowsmith silt loam:*	89IL-113-63-1	Ap	0-11	101	20	100	100	99	97	39	16	A-6	CL
1,200 feet south and 25 feet west	89IL-113-63-3	Bt1	14-21	101	21	100	100	100	98	53	29	A-7-6	CH
of the northeast corner of sec. 20,	89IL-113-63-6	C	33-60	114	15	100	100	100	99	28	5	A-4	ML
T. 22 N., R. 5 E.													
La Rose silt loam:	86IL-113-54-1	Ap	0-7	105	18	100	100	99	96	36	14	A-6	CL
1,386 feet east and 60 feet south	86IL-113-54-2	Bt1	7-12	108	18	99	99	97	88	39	17	A-6	CL
of the northwest corner of sec. 11,	86IL-113-54-5	C	22-60	122	10	95	92	88	64	18	1	A-4	ML
T. 23 N., R. 1 E.													
Lorenzo silt loam:	91IL-113-8-1	Ap	0-5	108	17	92	90	85	69	35	14	A-6	CL
990 feet south and 330 feet east of	91IL-113-8-2	Bt1	5-14	118	13	91	84	74	48	30	16	A-6	SC
the northwest corner of sec. 34, T.	91IL-113-8-5	C	24-60	132	10	97	92	83	53	16	3	A-4	ML
23 N., R. 3 E.													
Normal silt loam:	90IL-113-138-1	Ap	0-11	103	19	100	99	98	96	32	23	A-6	CL
1,650 feet south and 2,310 feet	90IL-113-138-2	E	11-20	108	16	100	99	96	94	29	21	A-6	CL
east of the northwest corner of	90IL-113-138-4	Bt2	28-37	103	20	100	100	99	96	41	20	A-7-6	CL
sec. 32, T. 24 N., R. 1 W.	90IL-113-138-6	C	52-60	116	18	100	100	99	97	35	19	A-6	CL
Aetna silt loam:**	91IL-113-7-1	Ap	0-8	112	16	100	99	97	90	32	10	A-4	CL
660 feet south and 198 feet east of	91IL-113-7-3	C1	13-24	107	18	100	100	98	94	31	10	A-4	CL
the northwest corner of sec. 34, T.	91IL-113-7-5	Ab	36-60	89	27	100	100	100	99	54	28	A-7-6	CH
23 N., R. 3 E.													
Strawn loam:	87IL-113-27-1	Ap	0-4	106	17	94	90	86	67	39	15	A-6	CL
297 feet west and 2,046 feet north	87IL-113-27-3	Bt2	7-14	107	18	98	96	91	79	41	21	A-7-6	CL
of the southeast corner of sec. 7,	87IL-113-27-6	C	24-60	127	12	95	89	83	69	24	8	A-4	CL
T. 25 N., R. 2 E.													

* Arrowsmith silt loam was correlated as Harco silt loam in the survey of McLean County published in 1998 (Windhorn, 1998).

** Aetna silt loam was correlated as Orion silt loam in the survey of McLean County published in 1998 (Windhorn, 1998).

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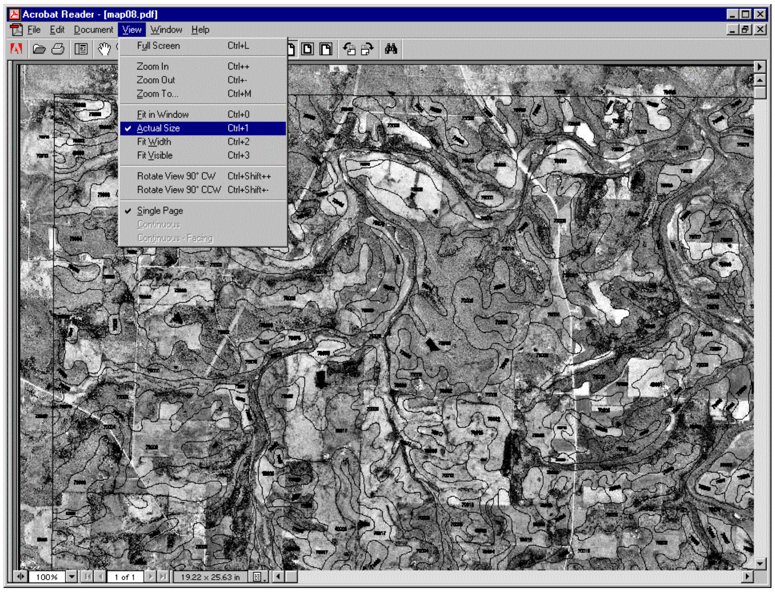
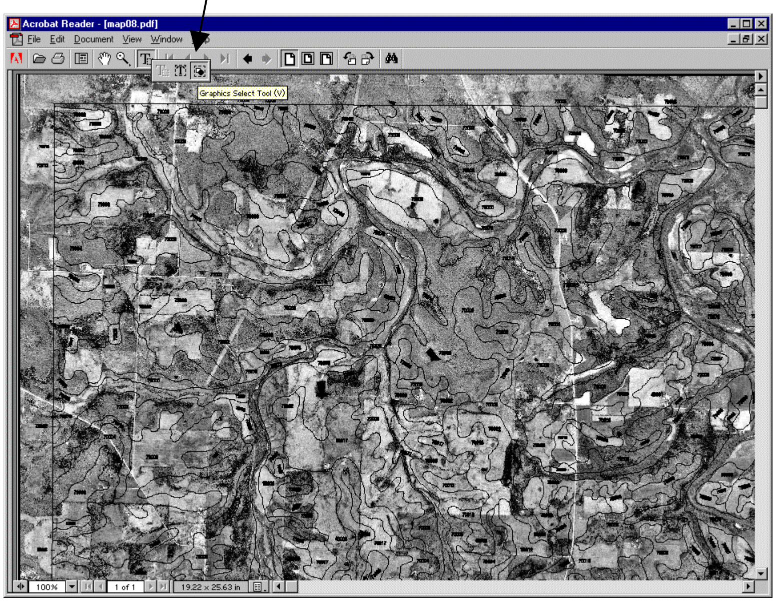
Printing Soil Survey Maps

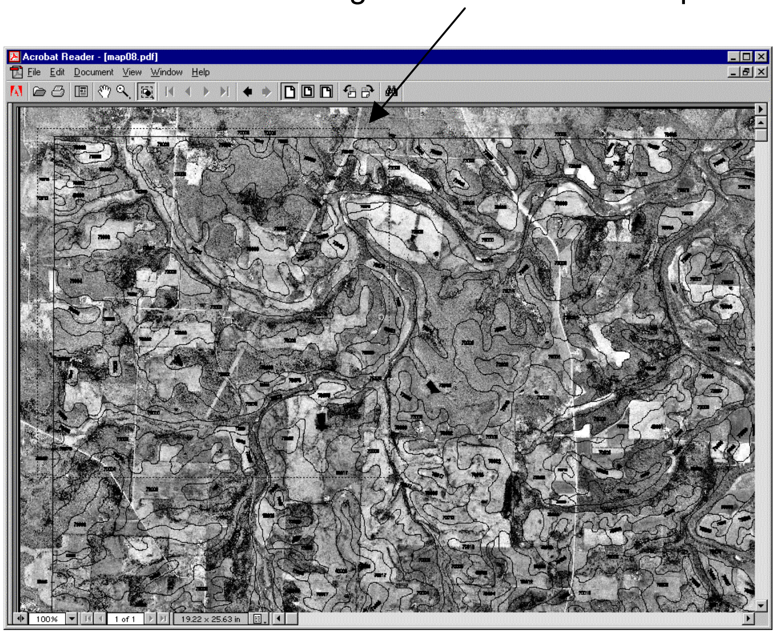
The soil survey maps were made at a scale of 1:12000 and were designed to be used at that scale. To print the maps at 1:12000 scale, set the view to Actual Size from the View pull down menu.



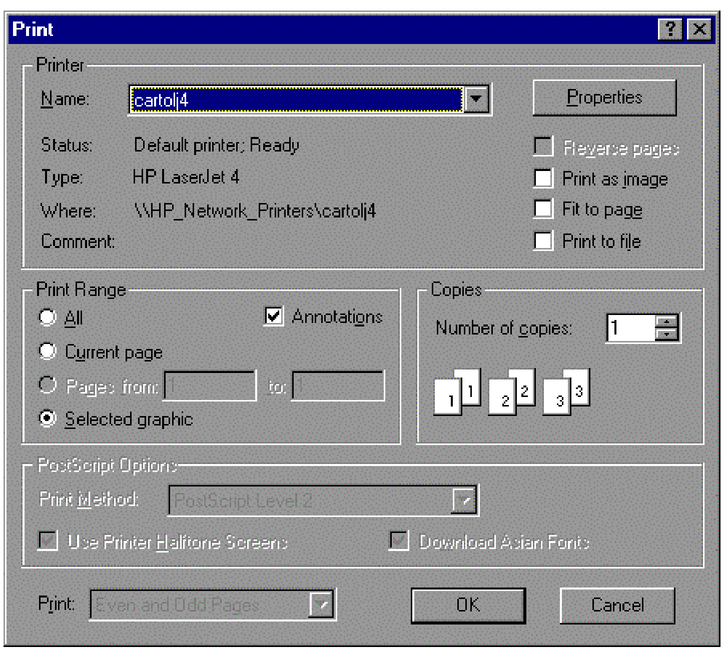
Using the pan tool, go to the area you would like to print. Select the Graphic Selection Tool by holding down the Text Selection Tool button and clicking on the Graphic Selection Tool button.



Then using the Graphic Selection Tool drag a box around the area you would like to print. Note dashed lines forming a box around area to print.



Select File Print. The Print Range will be set to Selected graphic. Click OK and the map will be sent to the printer.



NRCS SOILS 37A
3/95

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

DESCRIPTION SYMBOL

CULTURAL FEATURES

BOUNDARIES

- • National, state, or province
- • County or parish
- Minor civil division
- Reservation, (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access areas
- • Field sheet matchline & neatline
- Previously published survey

OTHER BOUNDARY (label)

- Airport, airfield — Davis airstrip
- • Cemetery — St Johns Cemetery
- City / county Park — Central Park

STATE COORDINATE TICK

• LAND DIVISION CORNERS (section and land grants)

• GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- # Trails

ROAD EMBLEMS & DESIGNATIONS

- • Interstate — 79; 79 345
- • Federal — 410; 410 224
- • State — 52; 52 347
- County, farm, or ranch — 376

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPELINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad
- ++Single side slope (showing actual feature location)

DAMS

- Medium or small — W

LANDFORM FEATURES

- Prominent Hill or Peak
- Soil Sample Site

* Cultural features for use in Illinois

CULTURAL FEATURES (cont.)

MISCELLANEOUS CULTURAL FEATURES

- Farmland, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and / or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end

DRAINAGE AND IRRIGATION

- Double line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch
- Intermittent drainage and/or irrigation ditch

SMALL LAKES, PONDS, AND RESERVOIRS

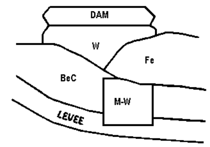
- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS



LANDFORM FEATURES

ESCARPMENTS

- Bedrock
- Other than bedrock

SHORT STEEP SLOPE

GULLY

DEPRESSION, closed

SINKHOLE

EXCAVATIONS

PITS

- Borrow pit
- Gravel pit
- Mine or quarry

LANDFILL

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

RECOMMENDED AD HOC SOIL SYMBOLS

	SYMBOL_ID		SYMBOL_ID	
	1		23	
	2		24	
	3		25	
	4	Gray spot	26 GSP	
	5		27	
	6		28	
	7	Calcareous spot	29 CSP	
	8	Muck spot	30 MUC	
	9		31	
	10		32	
	11		33	
Dumps	12 DMP		34	
	13	Mine subsided Area	35 MSA	
	14		36	
Oil brine spot	15 OBS		37	
	16		38	
	17		39	
	18	Glacial Till spot	40 GLA	
	19		41	
Disturbed soil spot	20 DSS		42	
	21		43	
	22		44	

Descriptions of Special Features

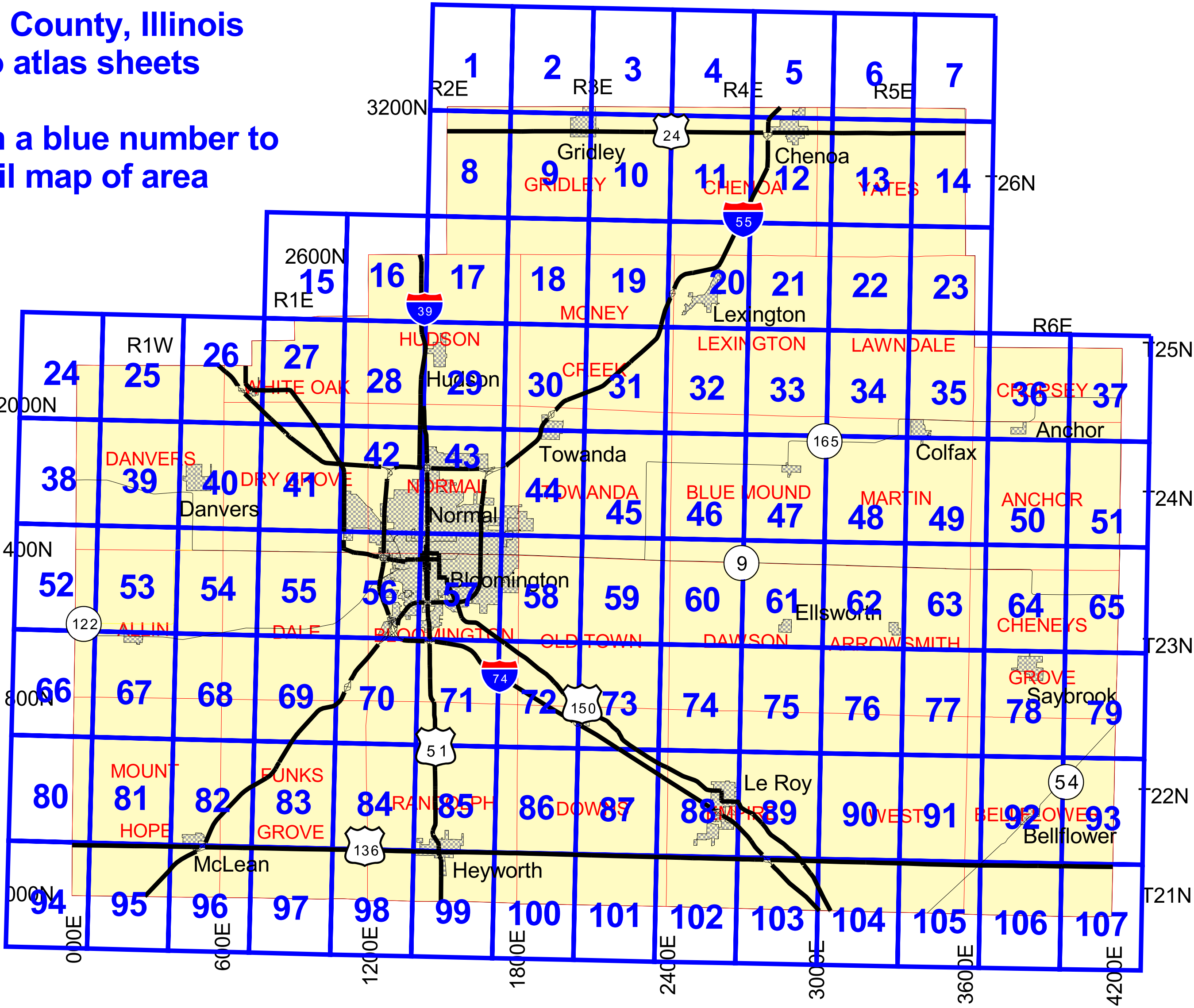
Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-l more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-l or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

McLean County, Illinois
Index to atlas sheets

Click on a blue number to view soil map of area



UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FLANAGAN SW SW QUADRANGLE
SHEET NUMBER 1 OF 107

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

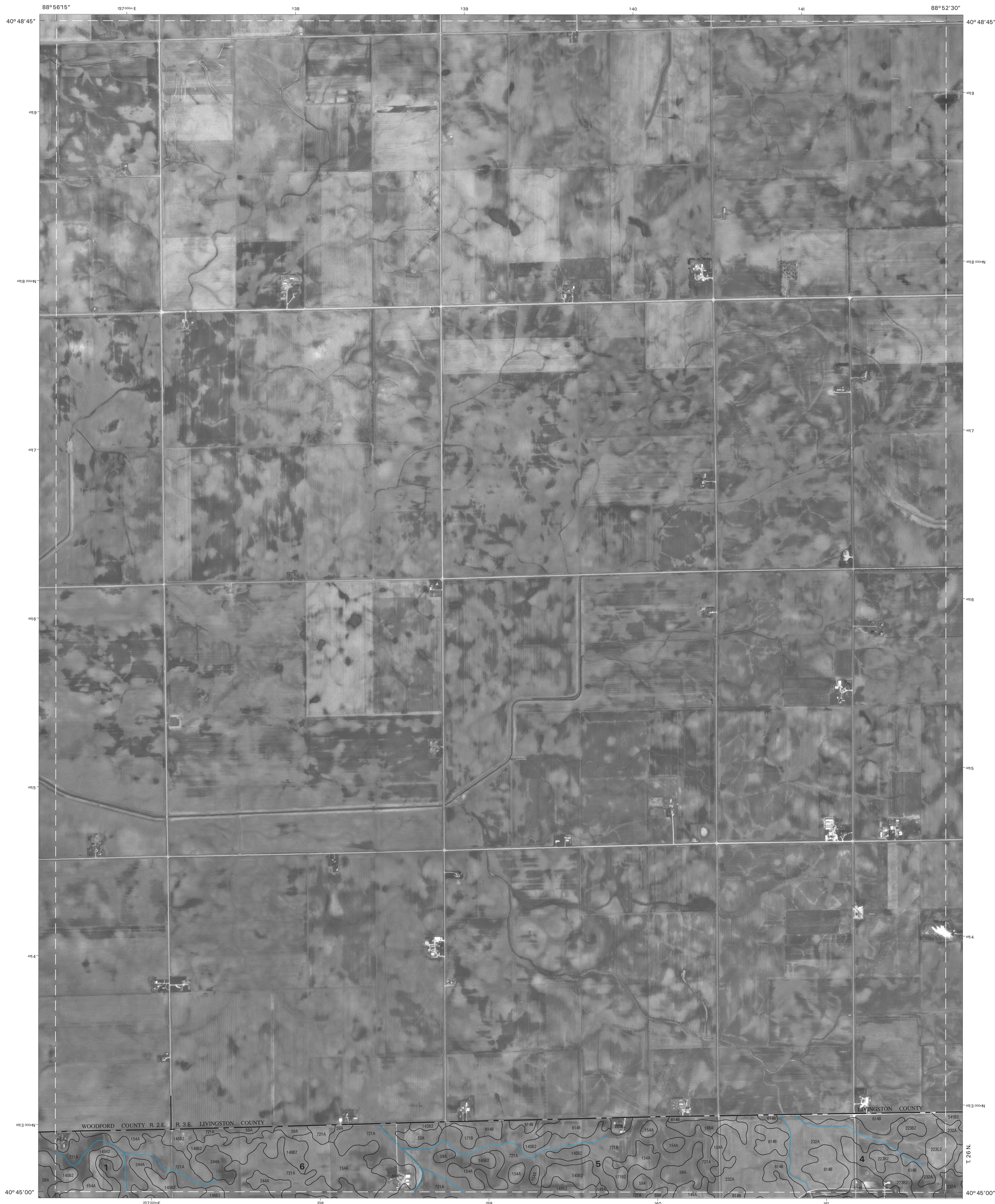
1 BENSON NE
2 FLANAGAN SW NW
3 FLANAGAN SW NE
4 BENSON SE
5 FLANAGAN SW SE (SHEET 2)
6 EL PASO NE
7 GRIDLEY NW (SHEET 8)
8 GRIDLEY NE (SHEET 9)

INDEX TO ADJOINING 3.75 MAPS

FLANAGAN SW SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FLANAGAN SW SE QUADRANGLE
SHEET NUMBER 2 OF 107



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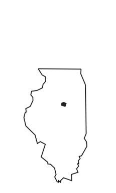
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 FLANAGAN SW NW
2 FLANAGAN SW NE
3 FLANAGAN SOUTH NW
4 FLANAGAN SW SW (SHEET 1)
5 FLANAGAN SOUTH SW (SHEET 3)
6 GRIDLEY NW (SHEET 8)
7 GRIDLEY NE (SHEET 9)
8 LEXINGTON NW (SHEET 10)

INDEX TO ADJOINING 3.75 MAPS

FLANAGAN SW SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FLANAGAN SOUTH SW QUADRANGLE
SHEET NUMBER 3 OF 107

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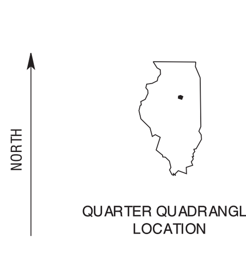


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3	
4		5	
6	7	8	

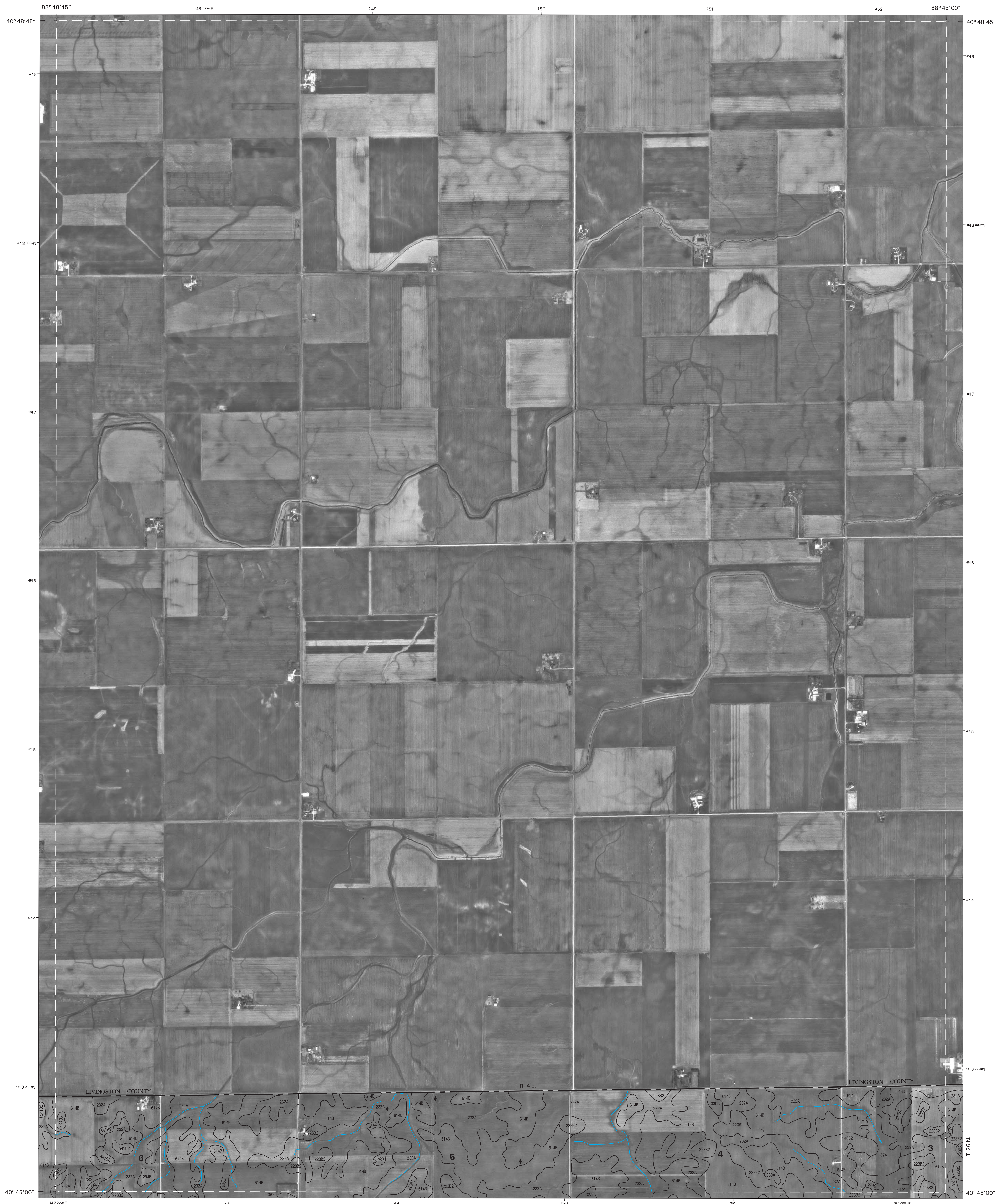
1 FLANAGAN SW NE
2 FLANAGAN SOUTH NW
3 FLANAGAN SOUTH NE
4 FLANAGAN SW SE (SHEET 2)
5 FLANAGAN SOUTH SE (SHEET 4)
6 GRIDLEY NE (SHEET 9)
7 LEXINGTON NW (SHEET 10)
8 LEXINGTON NE (SHEET 11)

INDEX TO ADJOINING 3.75 MAPS

FLANAGAN SOUTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FLANAGAN SOUTH SE QUADRANGLE
SHEET NUMBER 4 OF 107



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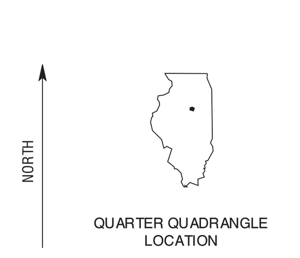

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

1	2	3
4		5
6	7	8

1 FLANAGAN SOUTH NW
2 FLANAGAN SOUTH NE
3 SOUTHWEST PONTIAC NW
4 FLANAGAN SOUTH SW (SHEET 3)
5 SOUTHWEST PONTIAC SW (SHEET 5)
6 LEXINGTON NW (SHEET 10)
7 LEXINGTON NE (SHEET 11)
8 CHENOA NW (SHEET 12)

INDEX TO ADJOINING 3.75 MAPS

FLANAGAN SOUTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SOUTHWEST PONTIAC SW QUADRANGLE
SHEET NUMBER 5 OF 107

88° 45′00″ | 40° 48′45″ | 88° 41′15″ | 40° 48′45″

40° 45′00″ | 88° 45′00″ | 88° 41′15″ | 40° 45′00″

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NORTH

QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 FLANAGAN SOUTH NE
2 SOUTHWEST PONTIAC NW
3 SOUTHWEST PONTIAC NE
4 FLANAGAN SOUTH SE (SHEET 4)
5 SOUTHWEST PONTIAC SE (SHEET 6)
6 LEXINGTON NE (SHEET 11)
7 CHENOA NW (SHEET 12)
8 CHENOA NE (SHEET 13)

INDEX TO ADJOINING 3.75 MAPS

SOUTHWEST PONTIAC SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SOUTHWEST PONTIAC SE QUADRANGLE
SHEET NUMBER 6 OF 107

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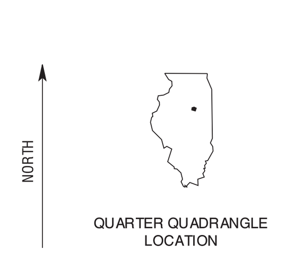

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SOUTHWEST PONTIAC NW
2 SOUTHWEST PONTIAC NE
3 SOUTHEAST PONTIAC NW
4 SOUTHWEST PONTIAC SW (SHEET 5)
5 SOUTHEAST PONTIAC SW (SHEET 7)
6 CHENOA NW (SHEET 12)
7 CHENOA NE (SHEET 13)
8 FAIRBURY NW (SHEET 14)

INDEX TO ADJOINING 3.75 MAPS

SOUTHWEST PONTIAC SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 6 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SOUTHEAST PONTIAC SW QUADRANGLE
SHEET NUMBER 7 OF 107

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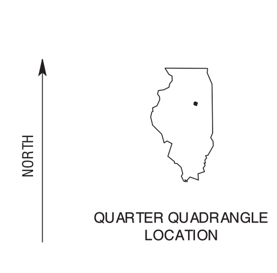


QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

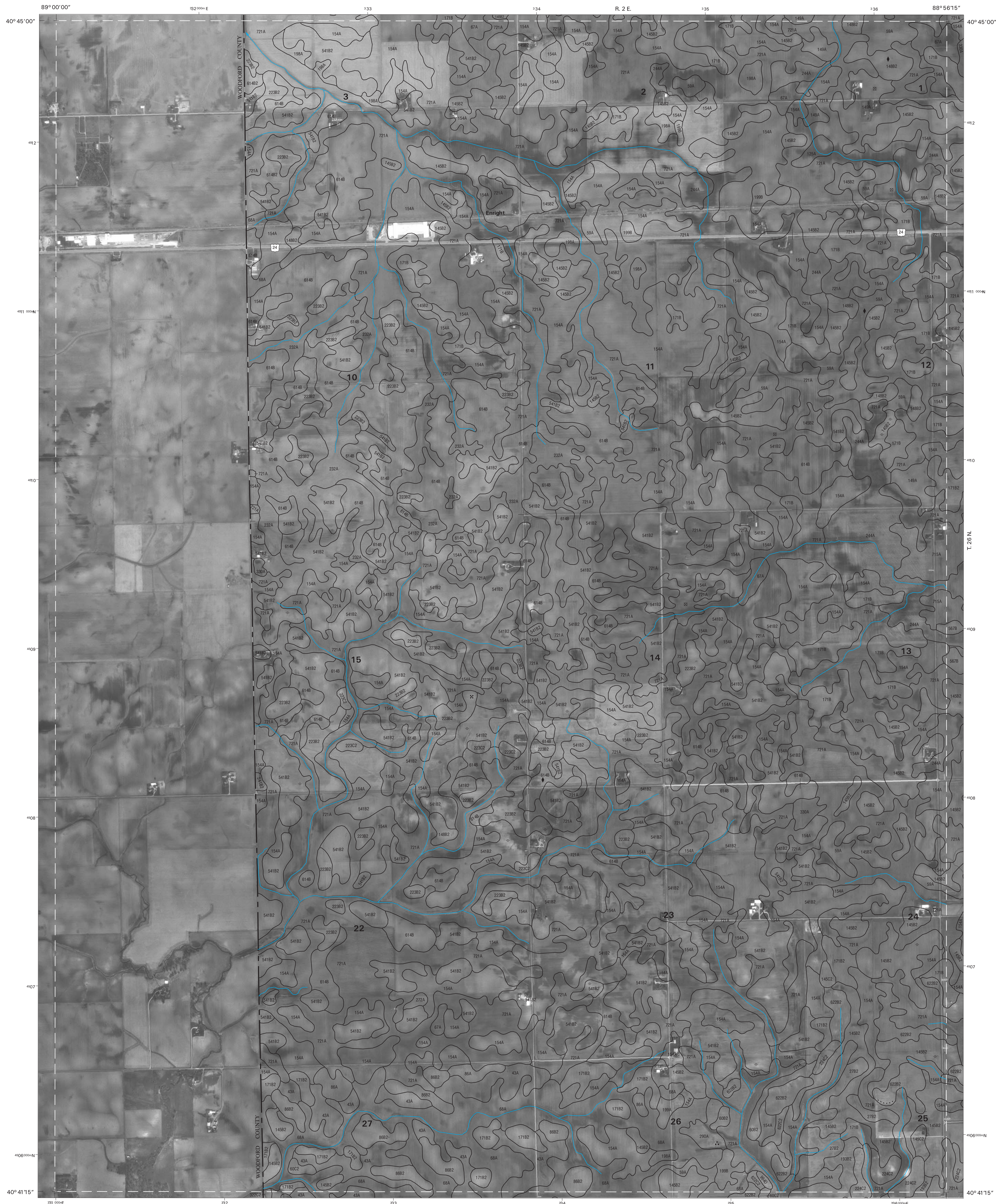
1 SOUTHWEST PONTIAC NE
2 SOUTHEAST PONTIAC NW
3 SOUTHEAST PONTIAC NE
4 SOUTHWEST PONTIAC SE (SHEET 6)
5 SOUTHEAST PONTIAC SE
6 CHENOA NE (SHEET 13)
7 FAIRBURY NW (SHEET 14)
8 FAIRBURY NE

INDEX TO ADJOINING 3.75 MAPS

SOUTHEAST PONTIAC SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GRIDLEY NW QUADRANGLE
SHEET NUMBER 8 OF 107



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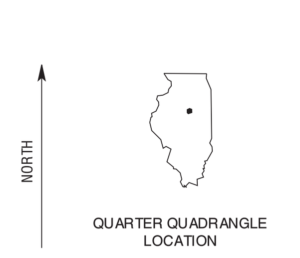


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 BENSON SE
2 FLANAGAN SW SW (SHEET 1)
3 FLANAGAN SW SE (SHEET 2)
4 EL PASO NE
5 GRIDLEY NE (SHEET 9)
6 EL PASO SE (SHEET 16)
7 GRIDLEY SW (SHEET 17)
8 GRIDLEY SE (SHEET 18)

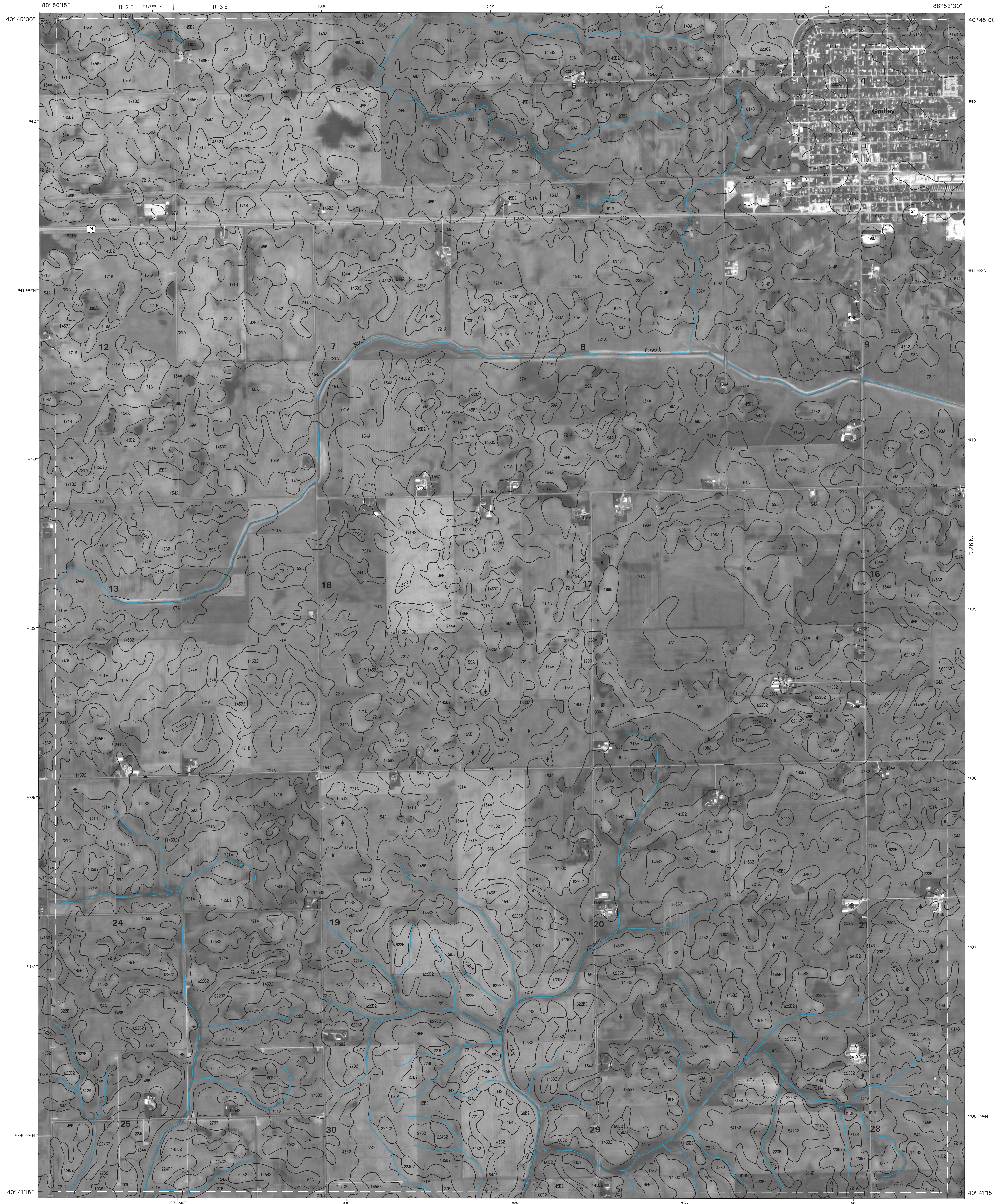
INDEX TO ADJOINING 3.75 MAPS

GRIDLEY NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 8 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GRIDLEY NE QUADRANGLE
SHEET NUMBER 9 OF 107



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

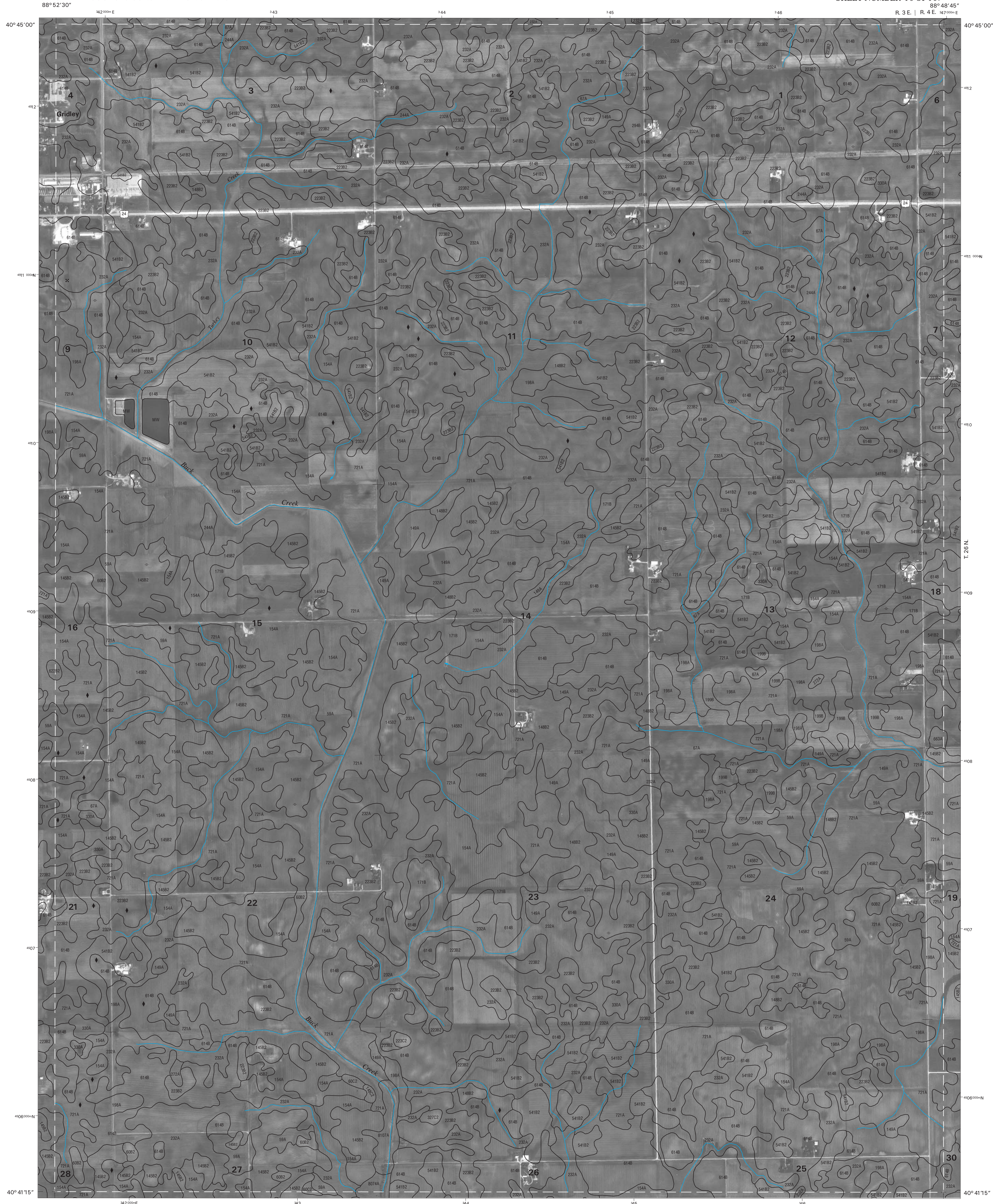
1 FLANAGAN SW SW (SHEET 1)
2 FLANAGAN SW SE (SHEET 2)
3 FLANAGAN SOUTH SW (SHEET 3)
4 GRIDLEY NW (SHEET 8)
5 LEXINGTON NW (SHEET 10)
6 GRIDLEY SW (SHEET 17)
7 GRIDLEY SE (SHEET 18)
8 LEXINGTON SW (SHEET 19)

INDEX TO ADJOINING 3.75 MAPS

GRIDLEY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LEXINGTON NW QUADRANGLE
SHEET NUMBER 10 OF 107



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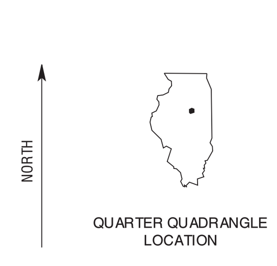

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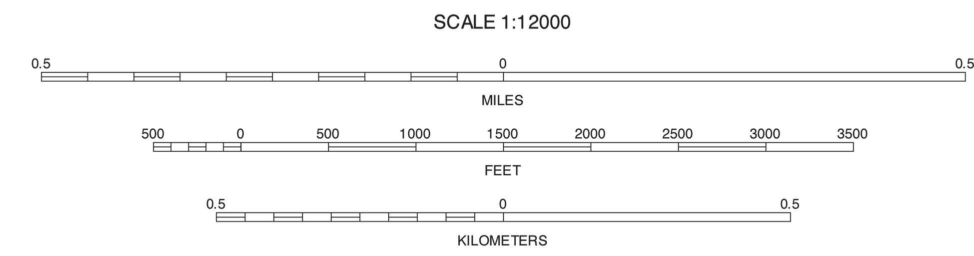

1	2	3
4		5
6	7	8

1 FLANAGAN SW SE (SHEET 2)
2 FLANAGAN SOUTH SW (SHEET 3)
3 FLANAGAN SOUTH SE (SHEET 4)
4 GRIDLEY NE (SHEET 9)
5 LEXINGTON NE (SHEET 11)
6 GRIDLEY SE (SHEET 18)
7 LEXINGTON SW (SHEET 19)
8 LEXINGTON SE (SHEET 20)

INDEX TO ADJOINING 3.75 MAPS

LEXINGTON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LEXINGTON NE QUADRANGLE
SHEET NUMBER 11 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 FLANAGAN SOUTH SW (SHEET 3)
2 FLANAGAN SOUTH SE (SHEET 4)
3 SOUTHWEST PONTIAC SW (SHEET 5)
4 LEXINGTON NW (SHEET 10)
5 CHENOA NW (SHEET 12)
6 LEXINGTON SW (SHEET 19)
7 LEXINGTON SE (SHEET 20)
8 CHENOA SW (SHEET 21)

INDEX TO ADJOINING 3.75 MAPS

LEXINGTON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
CHENOA NW QUADRANGLE
SHEET NUMBER 12 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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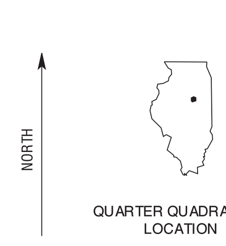
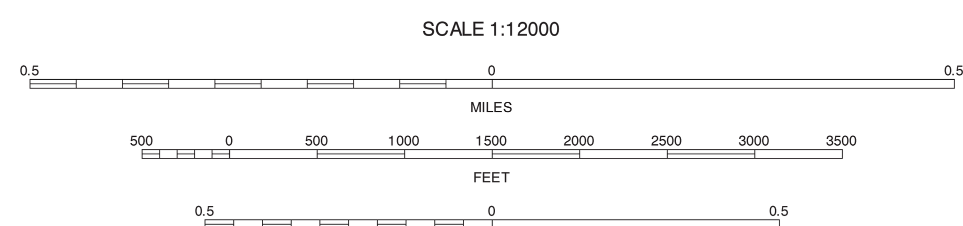


QUARTER QUADRANGLE
LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 FLANAGAN SOUTH SE (SHEET 4)
2 SOUTHWEST PONTIAC SW (SHEET 5)
3 SOUTHWEST PONTIAC SE (SHEET 6)
4 LEXINGTON NE (SHEET 11)
5 CHENOA NE (SHEET 13)
6 LEXINGTON SE (SHEET 20)
7 CHENOA SW (SHEET 21)
8 CHENOA SE (SHEET 22)

INDEX TO ADJOINING 3.75 MAPS

CHENOA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
CHENOA NE QUADRANGLE
SHEET NUMBER 13 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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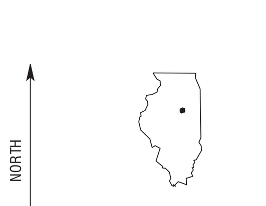


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SOUTHWEST PONTIAC SW (SHEET 5)
2 SOUTHWEST PONTIAC SE (SHEET 6)
3 SOUTHEAST PONTIAC SW (SHEET 7)
4 CHENOA NW (SHEET 12)
5 FAIRBURY NW (SHEET 14)
6 CHENOA SW (SHEET 21)
7 CHENOA SE (SHEET 22)
8 FAIRBURY SW (SHEET 23)

INDEX TO ADJOINING 3.75 MAPS

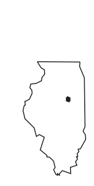
CHENOA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FAIRBURY NW QUADRANGLE
SHEET NUMBER 14 OF 107

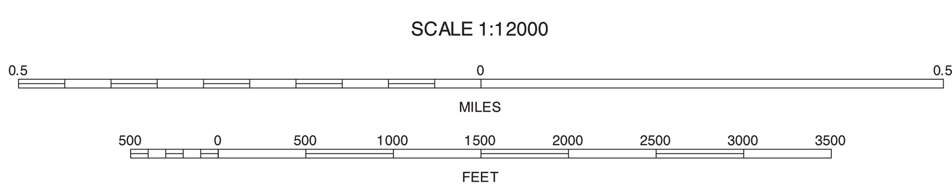
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 SOUTHWEST PONTIAC SE (SHEET 6)
2 SOUTHEAST PONTIAC SW (SHEET 7)
3 SOUTHEAST PONTIAC SE
4 CHENOA NE (SHEET 13)
5 FAIRBURY NE
6 CHENOA SE (SHEET 22)
7 FAIRBURY SW (SHEET 23)
8 FAIRBURY SE

INDEX TO ADJOINING 3.75 MAPS

FAIRBURY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 SECOR NE
2 EL PASO NW
3 EL PASO NE
4 SECOR SE
5 EL PASO SE (SHEET 16)
6 DANVERS NE (SHEET 26)
7 NORMAL WEST NW (SHEET 27)
8 NORMAL WEST NE (SHEET 28)

INDEX TO ADJOINING 3.75 MAPS

EL PASO SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

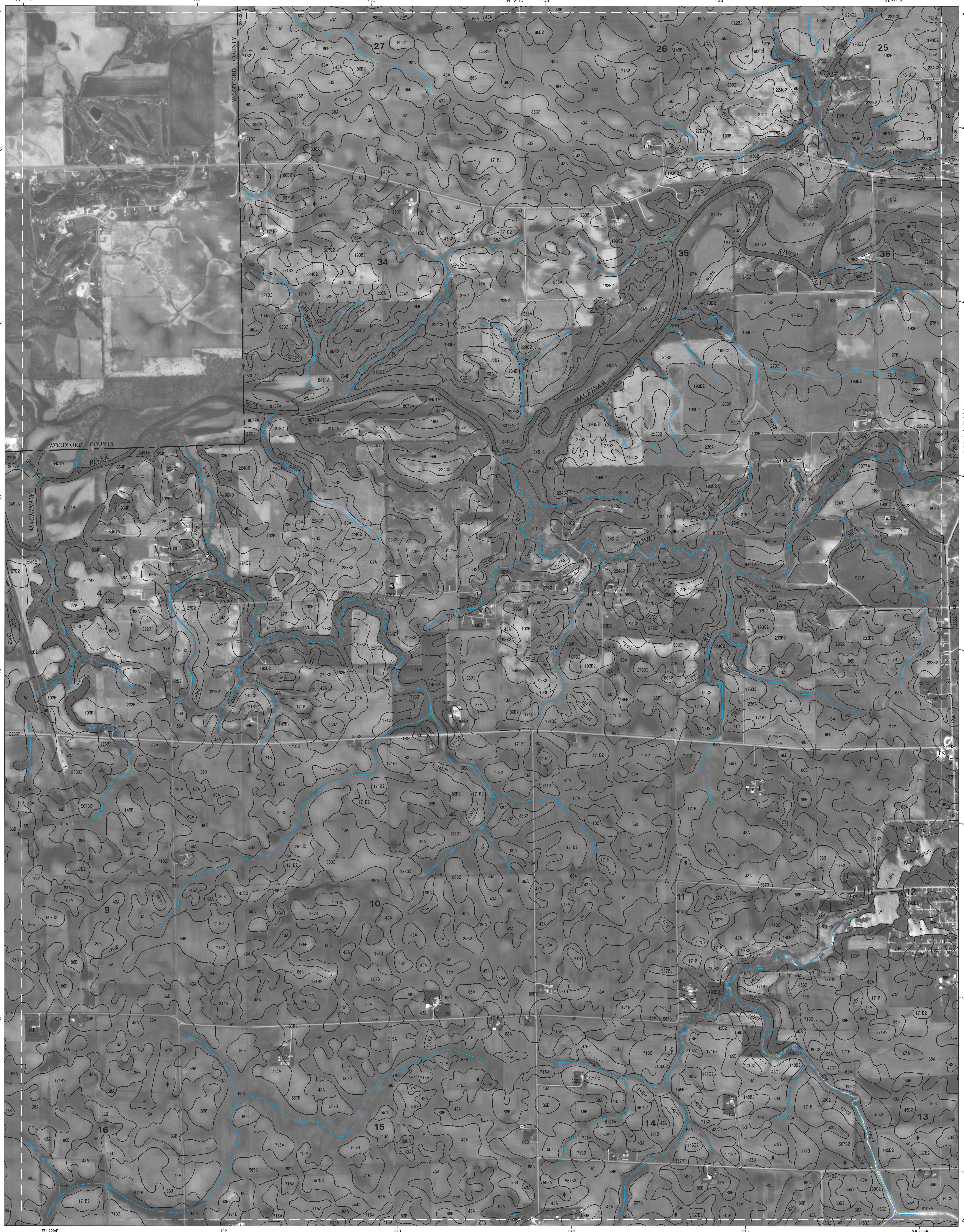
1 EL PASO NW
2 EL PASO NE
3 GRIDLEY NW (SHEET 8)
4 EL PASO SW (SHEET 15)
5 GRIDLEY SW (SHEET 17)
6 NORMAL WEST NW (SHEET 27)
7 NORMAL WEST NE (SHEET 28)
8 NORMAL EAST NW (SHEET 29)

INDEX TO ADJOINING 3.75 MAPS

EL PASO SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GRIDLEY SW QUADRANGLE
SHEET NUMBER 17 OF 107



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

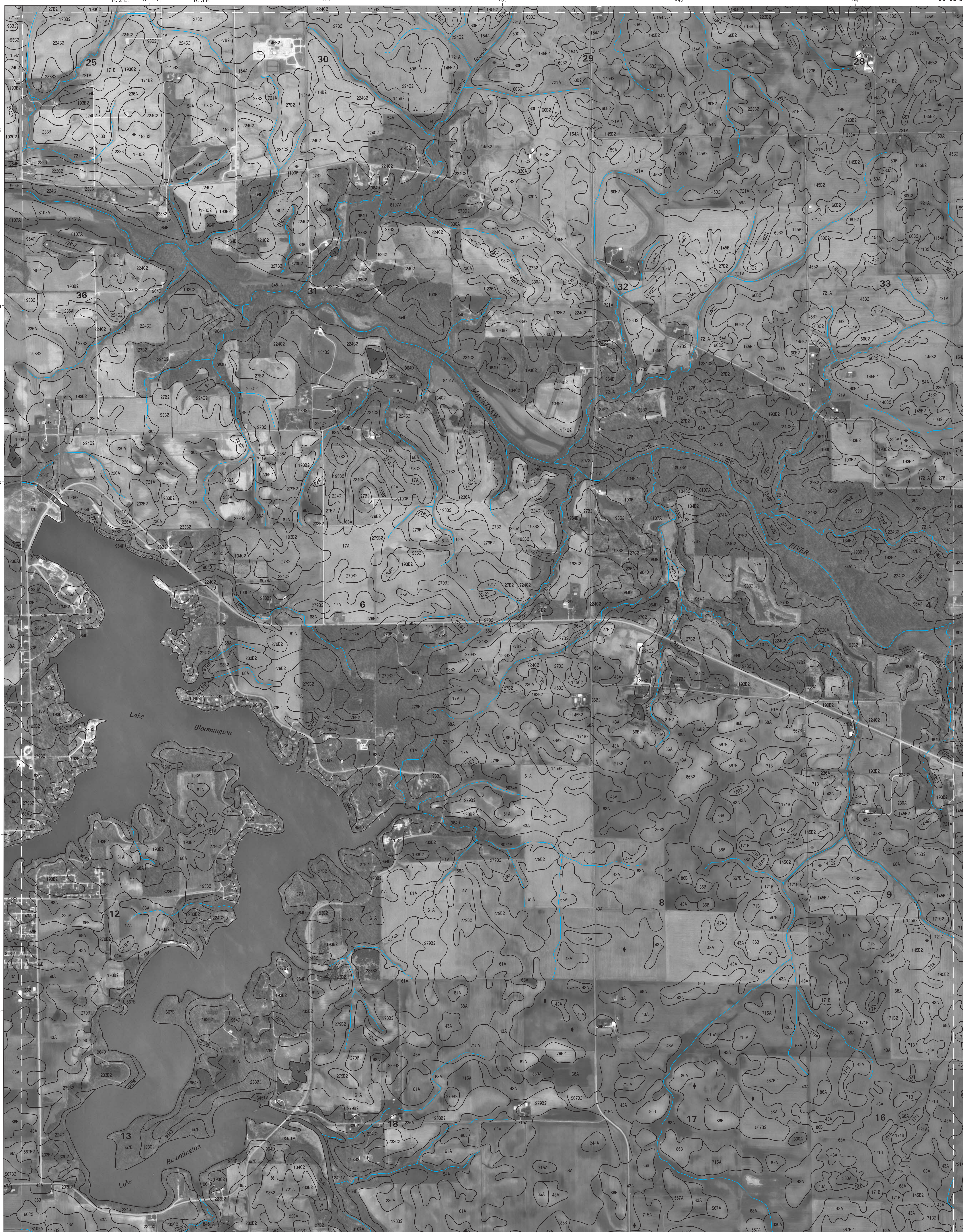
1 EL PASO NE
2 GRIDLEY NW (SHEET 8)
3 GRIDLEY NE (SHEET 9)
4 EL PASO SE (SHEET 16)
5 GRIDLEY SE (SHEET 18)
6 NORMAL WEST NE (SHEET 28)
7 NORMAL EAST NW (SHEET 29)
8 NORMAL EAST NE (SHEET 30)

INDEX TO ADJOINING 3.75 MAPS

GRIDLEY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GRIDLEY SE QUADRANGLE
SHEET NUMBER 18 OF 107



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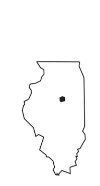
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

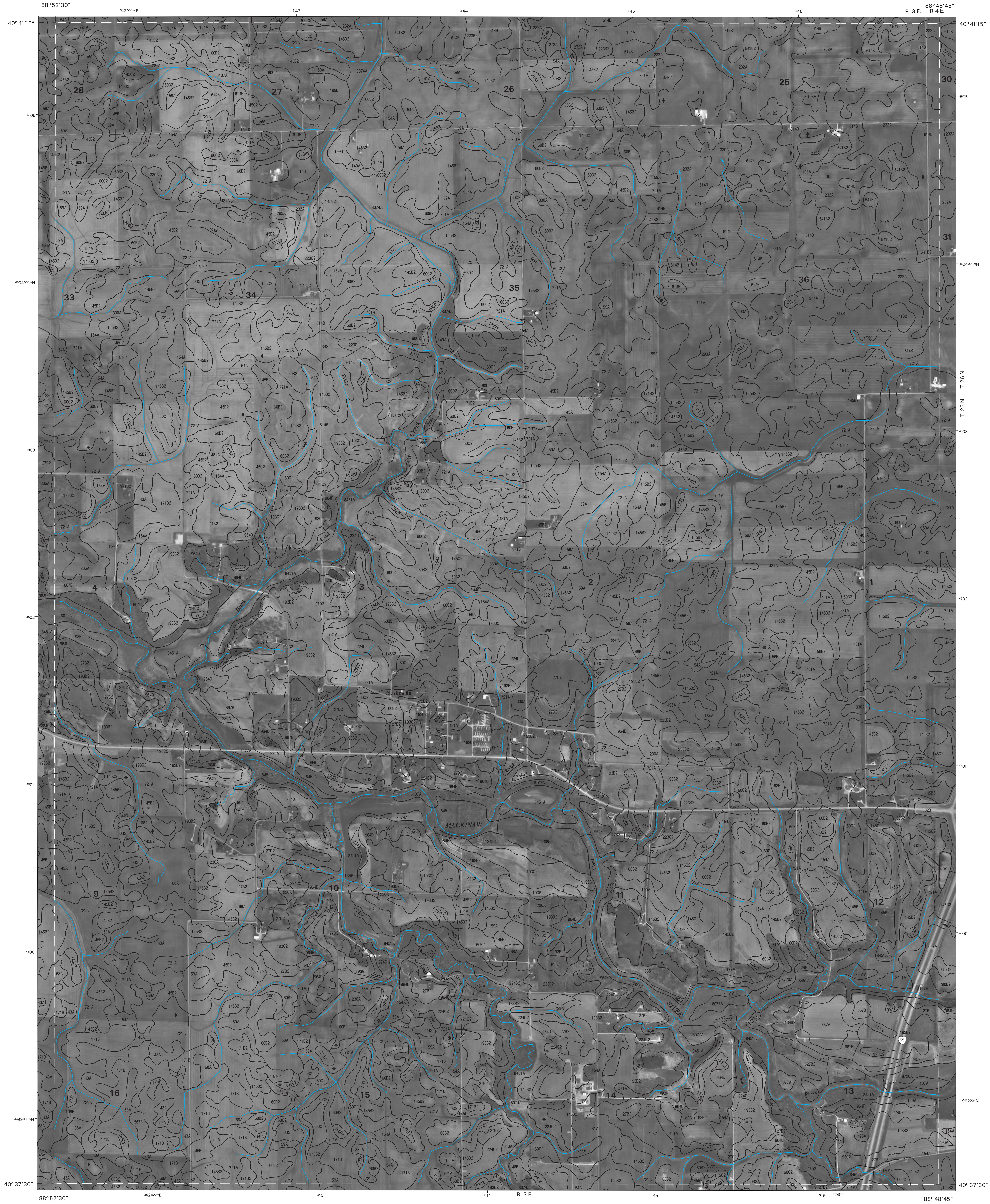
1 GRIDLEY NW (SHEET 8)
2 GRIDLEY NE (SHEET 9)
3 LEXINGTON NW (SHEET 10)
4 GRIDLEY SW (SHEET 17)
5 LEXINGTON SW (SHEET 19)
6 NORMAL EAST NW (SHEET 29)
7 NORMAL EAST NE (SHEET 30)
8 MERNA NW (SHEET 31)

INDEX TO ADJOINING 3.75 MAPS

GRIDLEY SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LEXINGTON SW QUADRANGLE
SHEET NUMBER 19 OF 107



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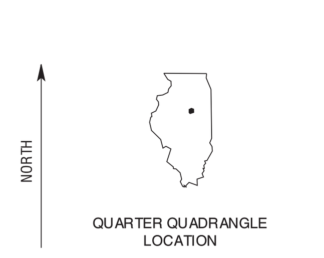


SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

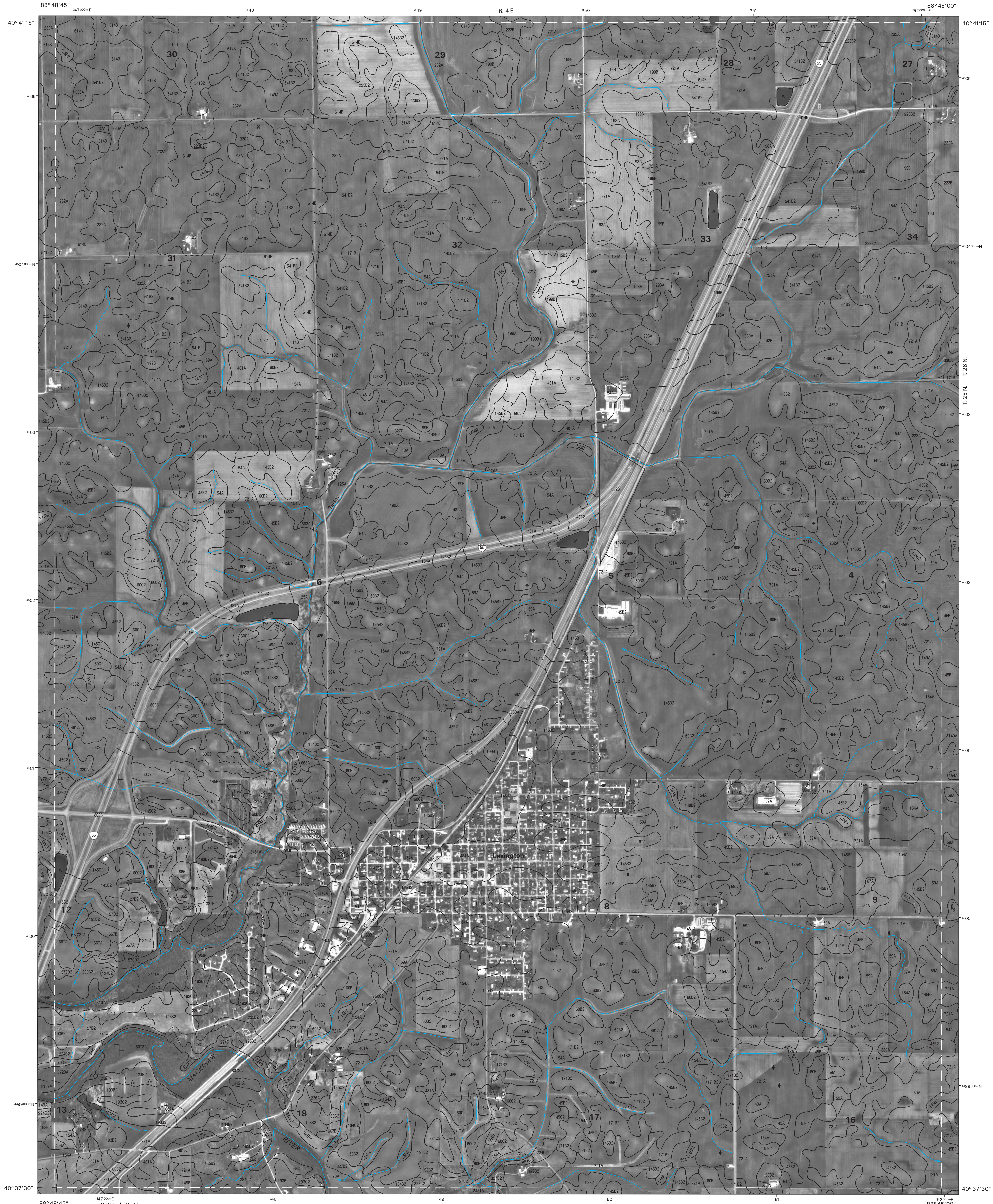
1 GRIDLEY NE (SHEET 9)
2 LEXINGTON NW (SHEET 10)
3 LEXINGTON NE (SHEET 11)
4 GRIDLEY SE (SHEET 18)
5 LEXINGTON SE (SHEET 20)
6 NORMAL EAST NE (SHEET 30)
7 MERNA NW (SHEET 31)
8 MERNA NE (SHEET 32)

INDEX TO ADJOINING 3.75 MAPS

LEXINGTON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LEXINGTON SE QUADRANGLE
SHEET NUMBER 20 OF 107



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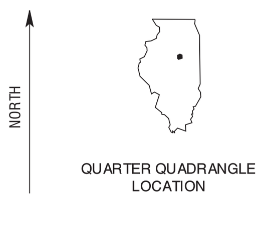


QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

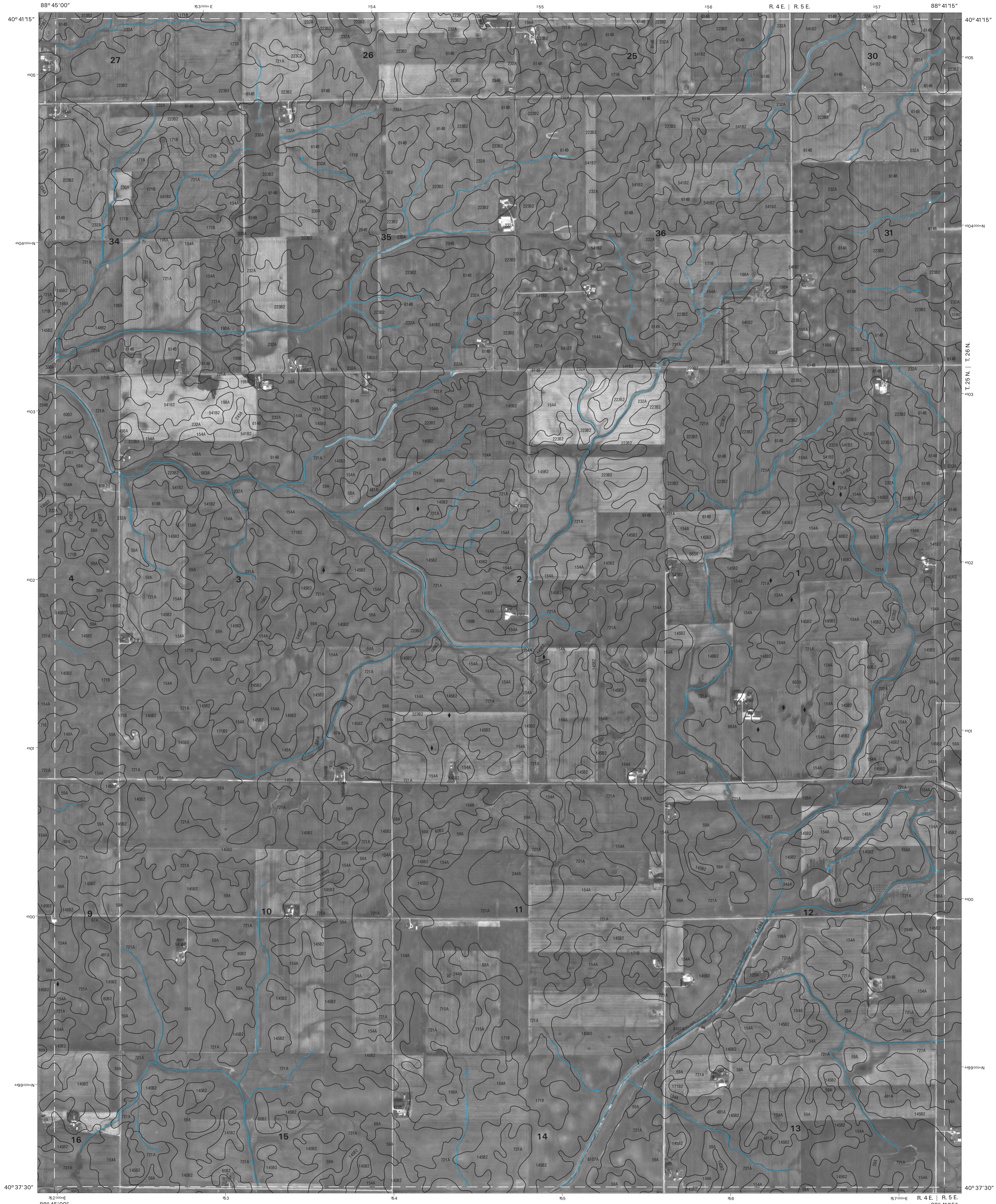
1 LEXINGTON NW (SHEET 10)
2 LEXINGTON NE (SHEET 11)
3 CHENOA NW (SHEET 12)
4 LEXINGTON SW (SHEET 19)
5 CHENOA SW (SHEET 21)
6 MERNA NW (SHEET 31)
7 MERNA NE (SHEET 32)
8 COOKSVILLE NW (SHEET 33)

INDEX TO ADJOINING 3.75 MAPS

LEXINGTON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
CHENOA SW QUADRANGLE
SHEET NUMBER 21 OF 107



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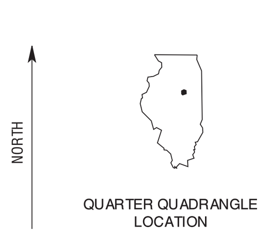
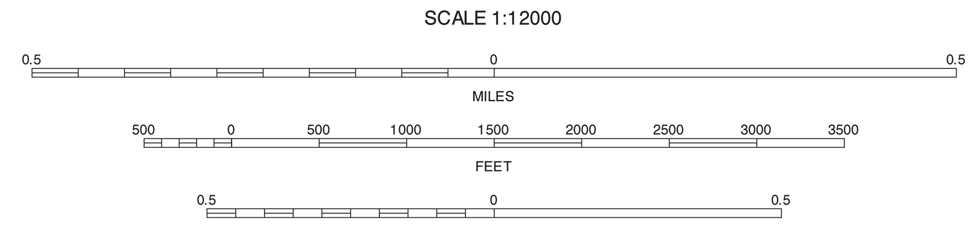


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

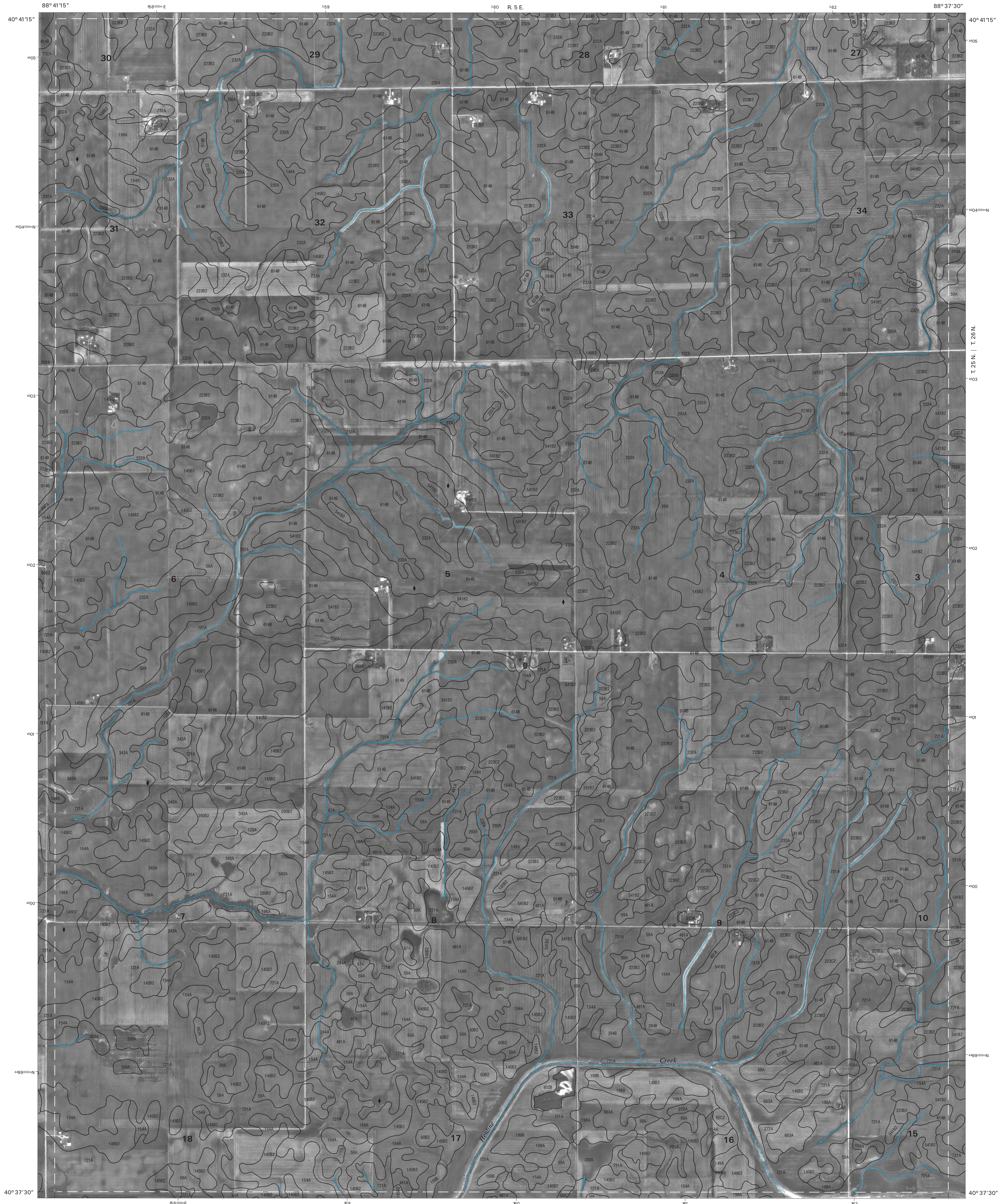
1 LEXINGTON NE (SHEET 11)
2 CHENOA NW (SHEET 12)
3 CHENOA NE (SHEET 13)
4 LEXINGTON SE (SHEET 20)
5 CHENOA SE (SHEET 22)
6 MERNA NE (SHEET 32)
7 COOKSVILLE NW (SHEET 33)
8 COOKSVILLE NE (SHEET 34)

INDEX TO ADJOINING 3.75 MAPS

CHENOA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
CHENOA SE QUADRANGLE
SHEET NUMBER 22 OF 107



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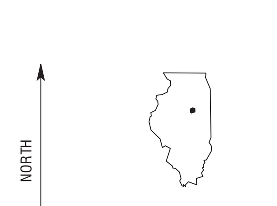


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

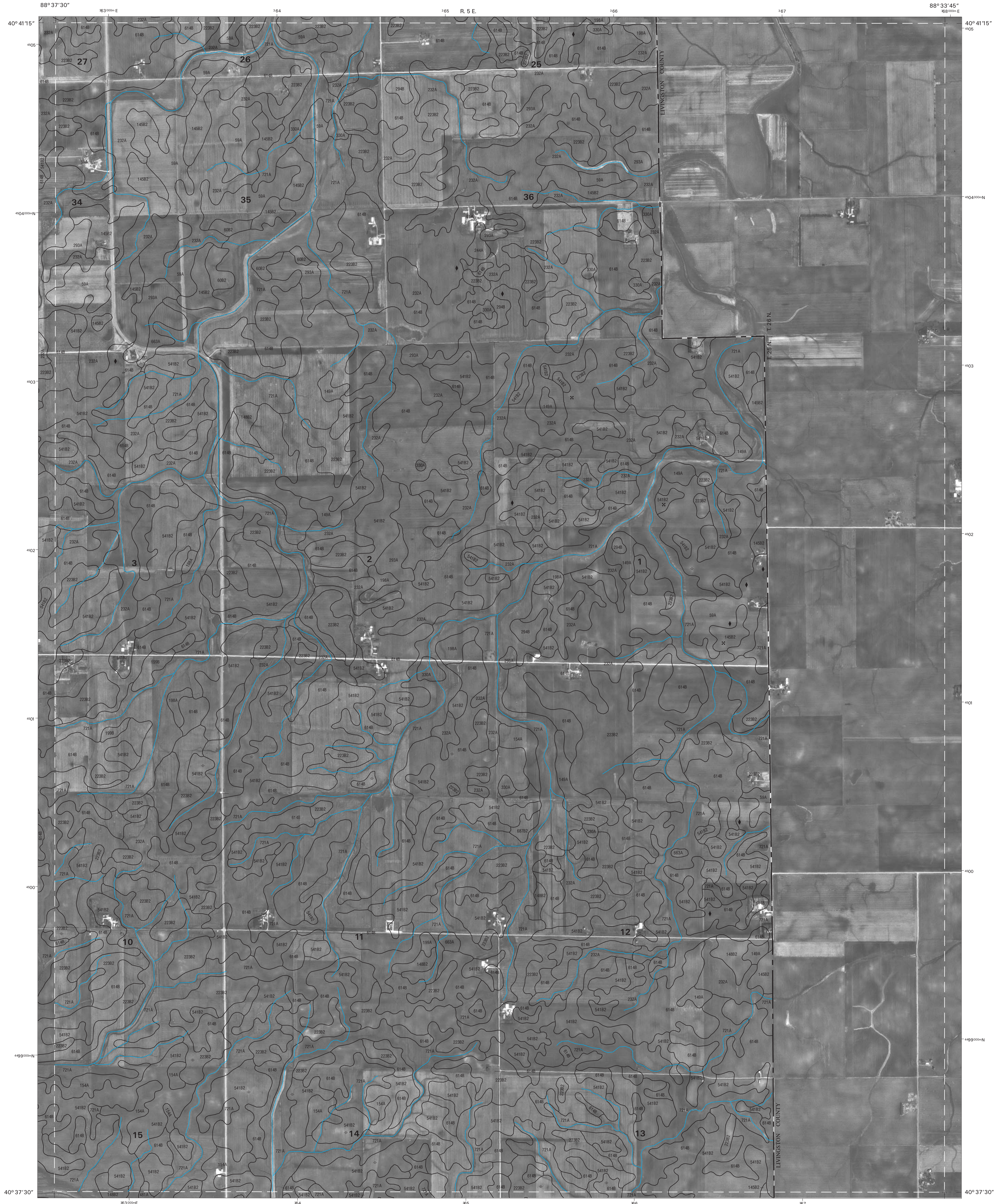
1 CHENOA NW (SHEET 12)
2 CHENOA NE (SHEET 13)
3 FAIRBURY NW (SHEET 14)
4 CHENOA SW (SHEET 21)
5 FAIRBURY SW (SHEET 23)
6 COOKSVILLE NW (SHEET 33)
7 COOKSVILLE NE (SHEET 34)
8 COLFAX NW (SHEET 35)

INDEX TO ADJOINING 3.75 MAPS

CHENOA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FAIRBURY SW QUADRANGLE
SHEET NUMBER 23 OF 107



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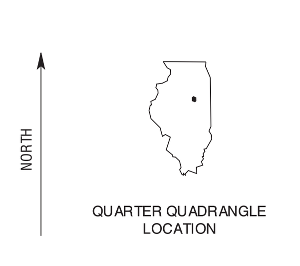
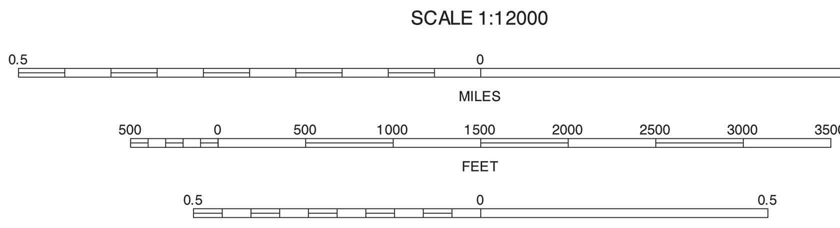


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

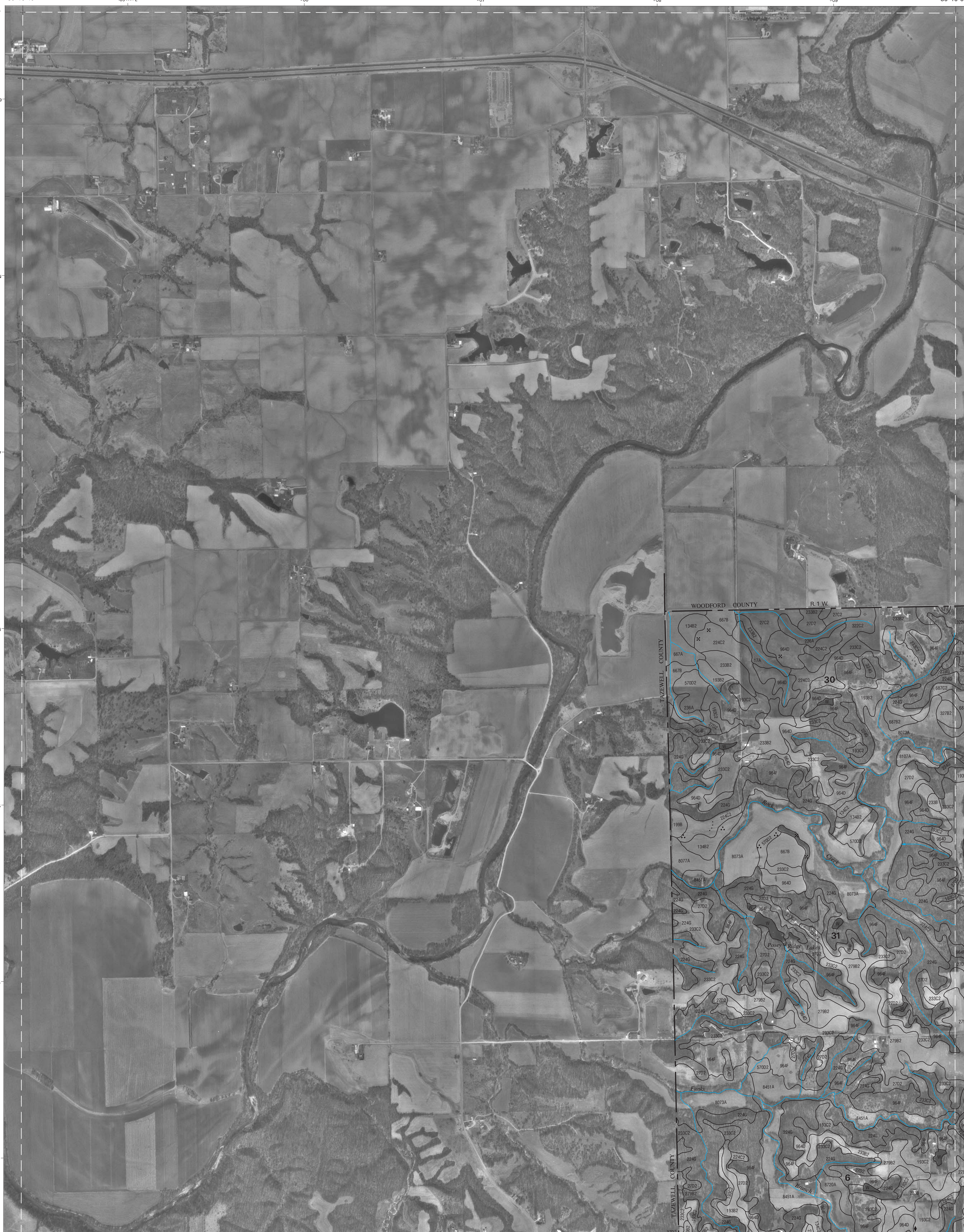
1 CHENOA NE (SHEET 13)
2 FAIRBURY NW (SHEET 14)
3 FAIRBURY NE
4 CHENOA SE (SHEET 22)
5 FAIRBURY SE
6 COOKSVILLE NE (SHEET 34)
7 COLFAX NW (SHEET 35)
8 COLFAX NE (SHEET 36)

INDEX TO ADJOINING 3.75 MAPS

FAIRBURY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MACKINAW NE QUADRANGLE
SHEET NUMBER 24 OF 107



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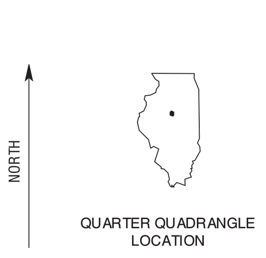


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 EUREKA SW
2 EUREKA SE
3 SECOR SW
4 MACKINAW NW
5 DANVERS NW (SHEET 25)
6 MACKINAW SW
7 MACKINAW SE (SHEET 38)
8 DANVERS SW (SHEET 39)

INDEX TO ADJOINING 3.75 MAPS

MACKINAW NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 EUREKA SE
2 SECOR SW
3 SECOR SE
4 MACKINAW NE (SHEET 24)
5 DANVERS NE (SHEET 26)
6 MACKINAW SE (SHEET 38)
7 DANVERS SW (SHEET 39)
8 DANVERS SE (SHEET 40)

INDEX TO ADJOINING 3.75 MAPS

DANVERS NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
DANVERS NE QUADRANGLE
SHEET NUMBER 26 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SECOR SW
2 SECOR SE
3 EL PASO SW (SHEET 15)
4 DANVERS NW (SHEET 25)
5 NORMAL WEST NW (SHEET 27)
6 DANVERS SW (SHEET 39)
7 DANVERS SE (SHEET 40)
8 NORMAL WEST SW (SHEET 41)

INDEX TO ADJOINING 3.75 MAPS

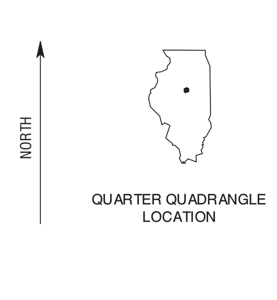
DANVERS NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL WEST NW QUADRANGLE
SHEET NUMBER 27 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

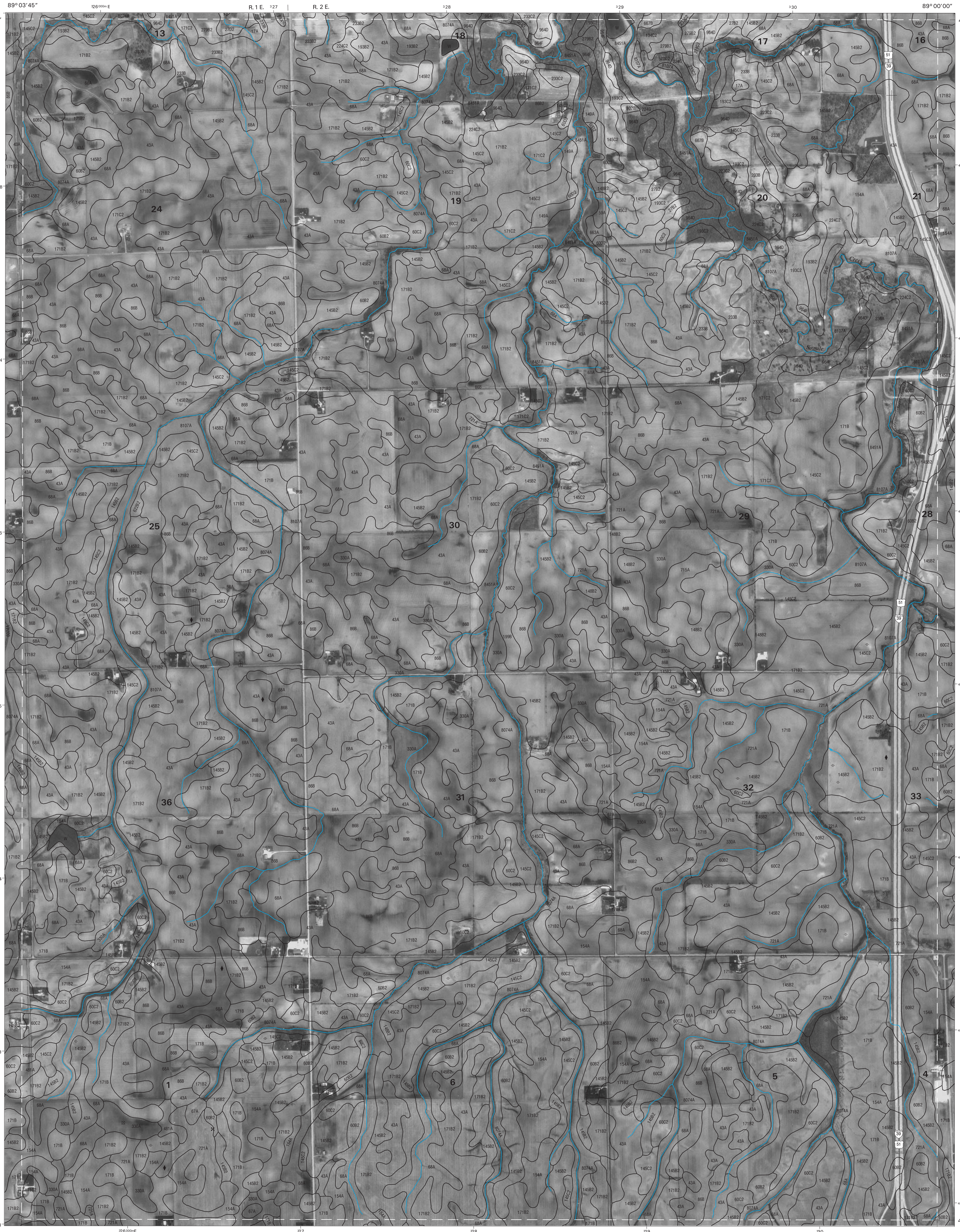
1 SECOR SE
2 EL PASO SW (SHEET 15)
3 EL PASO SE (SHEET 16)
4 DANVERS NE (SHEET 26)
5 NORMAL WEST NE (SHEET 28)
6 DANVERS SE (SHEET 40)
7 NORMAL WEST SW (SHEET 41)
8 NORMAL WEST SE (SHEET 42)

INDEX TO ADJOINING 3.75 MAPS

NORMAL WEST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL WEST NE QUADRANGLE
SHEET NUMBER 28 OF 107



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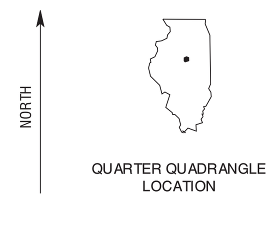
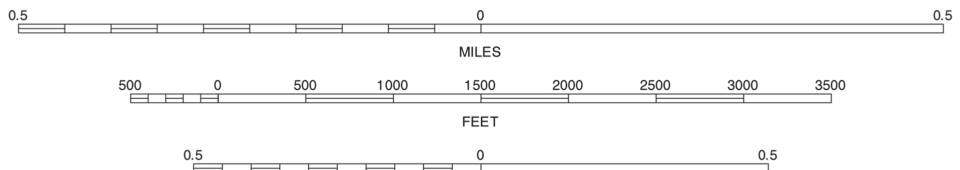
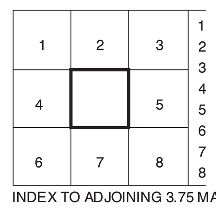






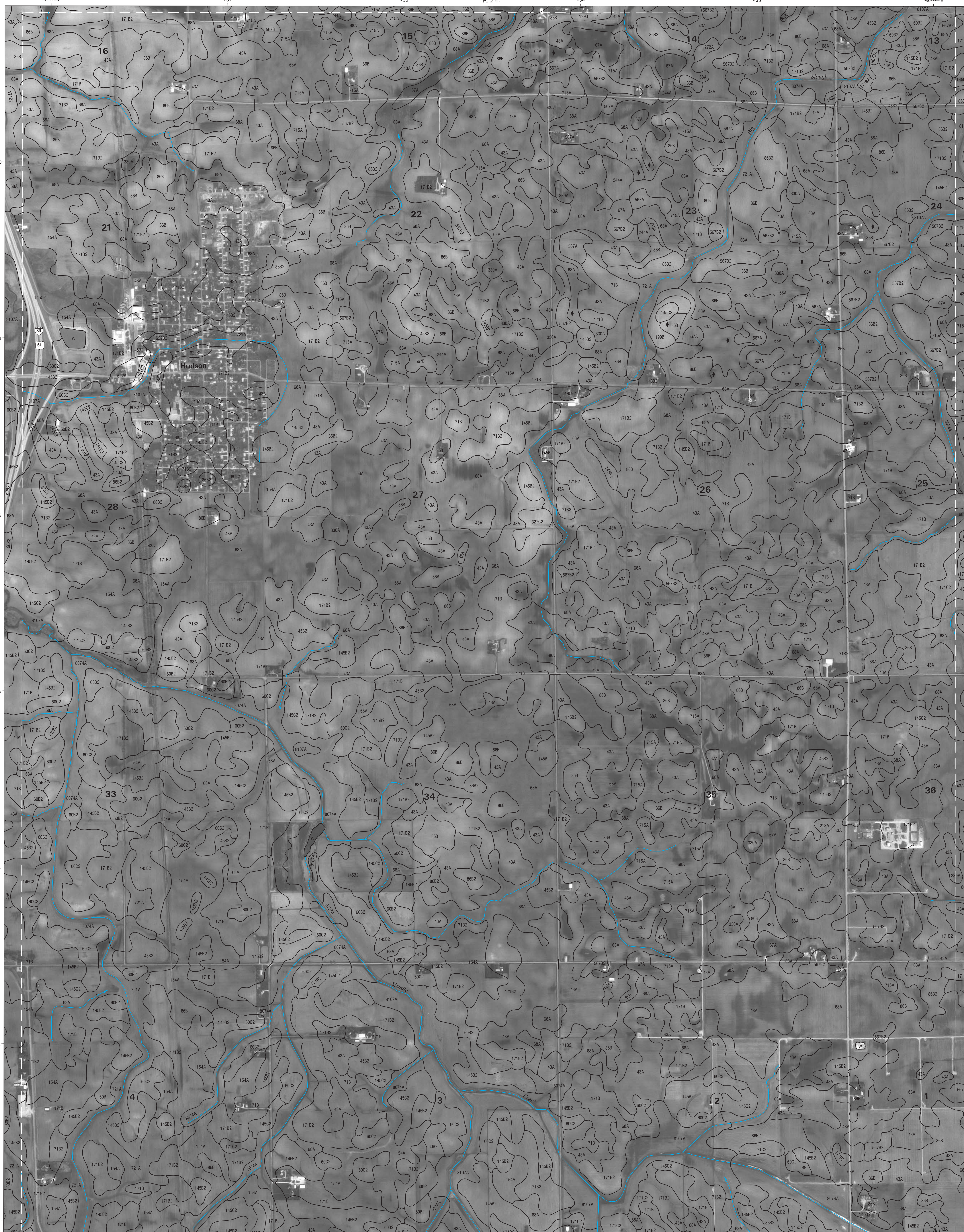
1 EL PASO SW (SHEET 15)
2 EL PASO SE (SHEET 16)
3 GRIDLEY SW (SHEET 17)
4 NORMAL WEST NW (SHEET 27)
5 NORMAL EAST NW (SHEET 29)
6 NORMAL WEST SW (SHEET 41)
7 NORMAL WEST SE (SHEET 42)
8 NORMAL EAST SW (SHEET 43)

INDEX TO ADJOINING 3.75 MAPS

NORMAL WEST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 28 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL EAST NW QUADRANGLE
SHEET NUMBER 29 OF 107



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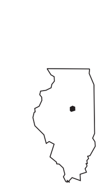
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 EL PASO SE (SHEET 16)
2 GRIDLEY SW (SHEET 17)
3 GRIDLEY SE (SHEET 18)
4 NORMAL WEST NE (SHEET 28)
5 NORMAL EAST NE (SHEET 30)
6 NORMAL WEST SE (SHEET 42)
7 NORMAL EAST SW (SHEET 43)
8 NORMAL EAST SE (SHEET 44)

INDEX TO ADJOINING 3.75 MAPS

NORMAL EAST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 29 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL EAST NE QUADRANGLE
SHEET NUMBER 30 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 GRIDLEY SW (SHEET 17)
2 GRIDLEY SE (SHEET 18)
3 LEXINGTON SW (SHEET 19)
4 NORMAL EAST NW (SHEET 29)
5 MERNA NW (SHEET 31)
6 NORMAL EAST SW (SHEET 43)
7 NORMAL EAST SE (SHEET 44)
8 MERNA SW (SHEET 45)

INDEX TO ADJOINING 3.75 MAPS

NORMAL EAST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MERNA NW QUADRANGLE
SHEET NUMBER 31 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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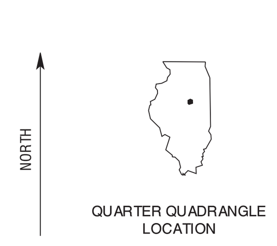

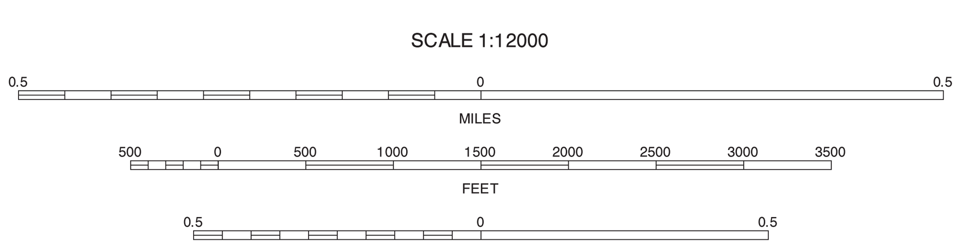

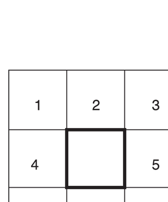

1 GRIDLEY SE (SHEET 18)
2 LEXINGTON SW (SHEET 19)
3 LEXINGTON SE (SHEET 20)
4 NORMAL EAST NE (SHEET 30)
5 MERNA NE (SHEET 32)
6 NORMAL EAST SE (SHEET 44)
7 MERNA SW (SHEET 45)
8 MERNA SE (SHEET 46)

MERNA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 31 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MERNA NE QUADRANGLE
SHEET NUMBER 32 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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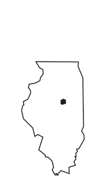
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

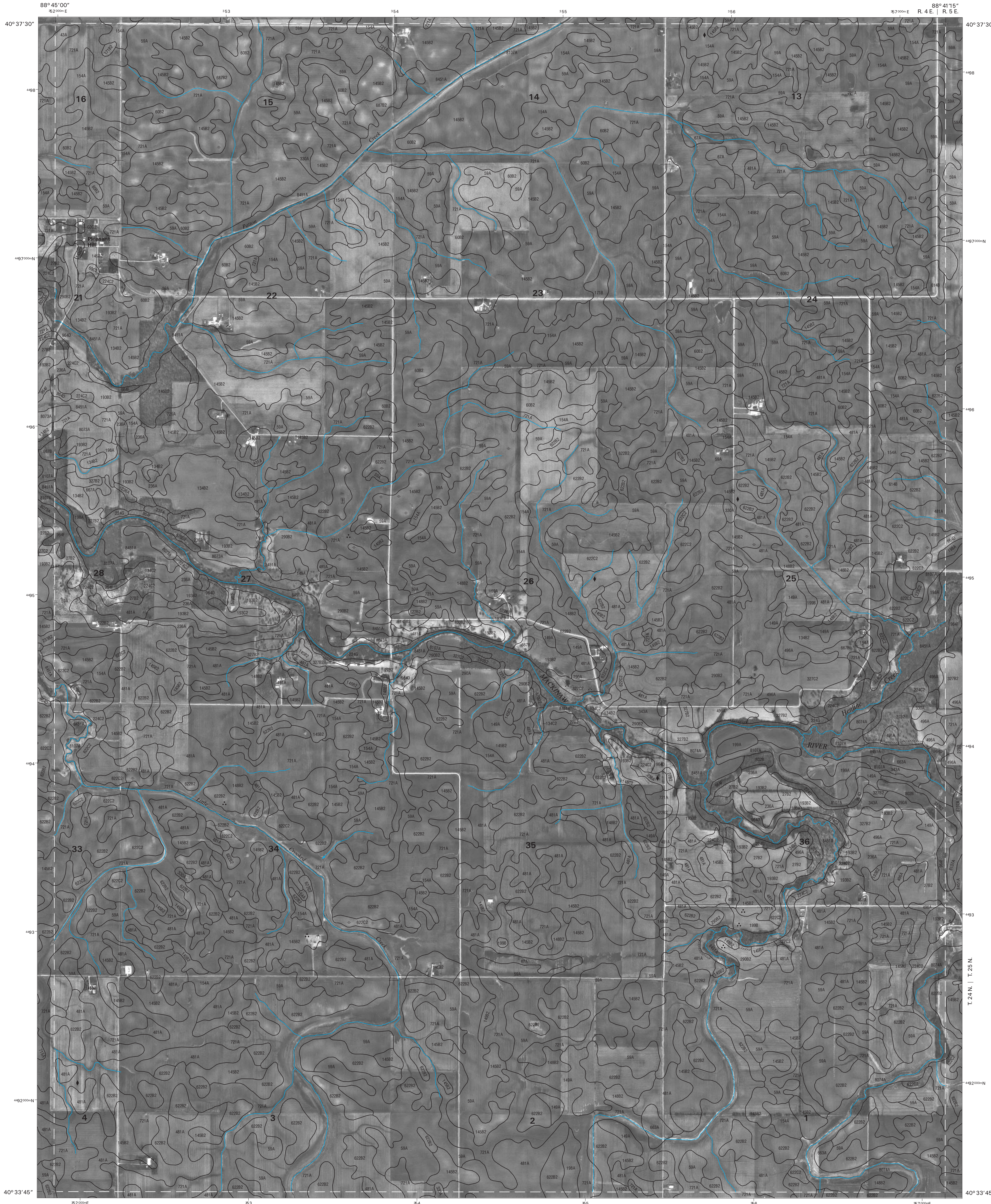
1 LEXINGTON SW (SHEET 19)
2 LEXINGTON SE (SHEET 20)
3 CHENOA SW (SHEET 21)
4 MERNA NW (SHEET 31)
5 COOKSVILLE NW (SHEET 33)
6 MERNA SW (SHEET 45)
7 MERNA SE (SHEET 46)
8 COOKSVILLE SW (SHEET 47)

INDEX TO ADJOINING 3.75 MAPS

MERNA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COOKSVILLE NW QUADRANGLE
SHEET NUMBER 33 OF 107



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 LEXINGTON SE (SHEET 20)
2 CHENOA SW (SHEET 21)
3 CHENOA SE (SHEET 22)
4 MERNA NE (SHEET 32)
5 COOKSVILLE NE (SHEET 34)
6 MERNA SE (SHEET 46)
7 COOKSVILLE SW (SHEET 47)
8 COOKSVILLE SE (SHEET 48)

INDEX TO ADJOINING 3.75 MAPS

COOKSVILLE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COOKSVILLE NE QUADRANGLE
SHEET NUMBER 34 OF 107

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

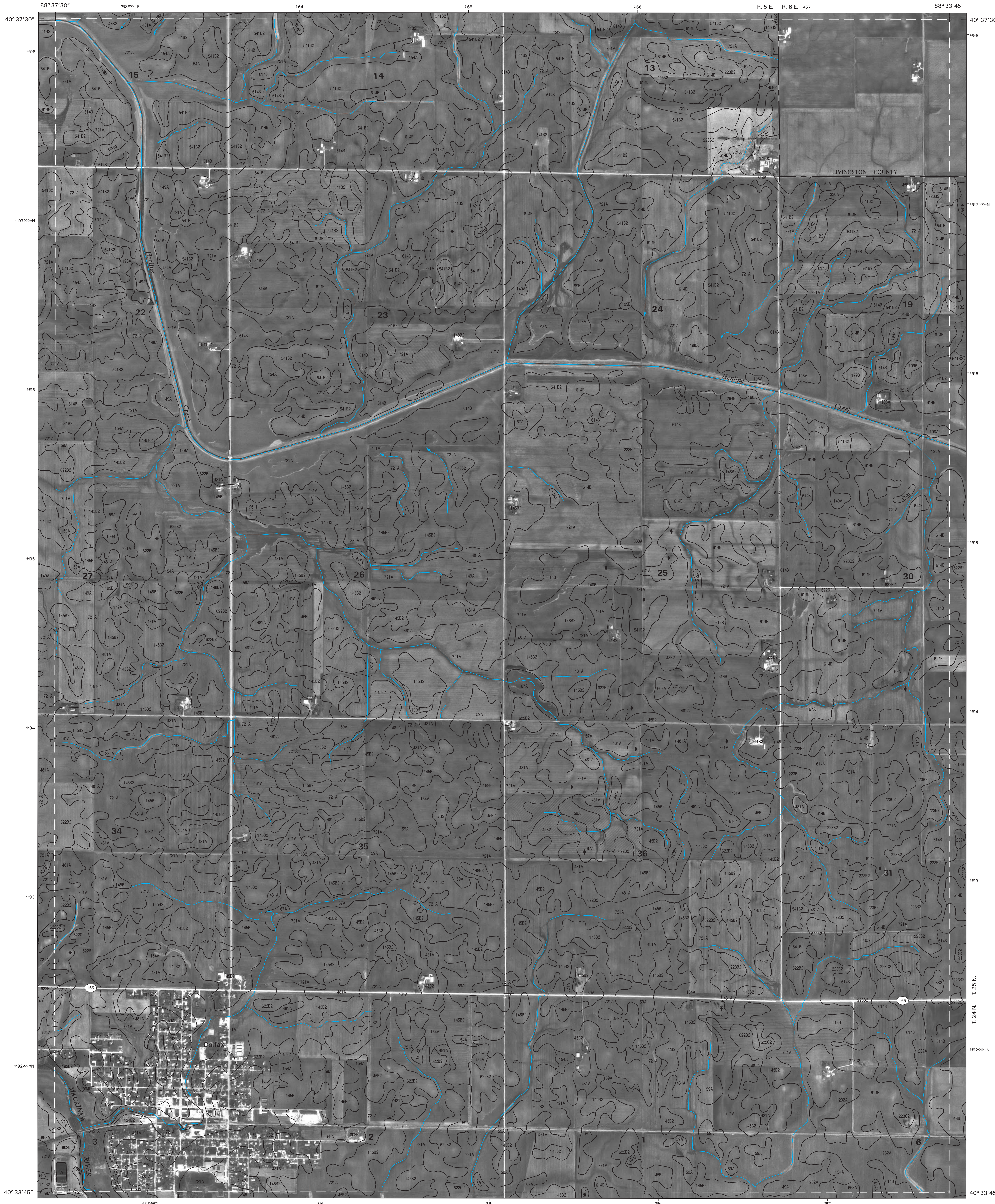
1 CHENOA SW (SHEET 21)
2 CHENOA SE (SHEET 22)
3 FAIRBURY SW (SHEET 23)
4 COOKSVILLE NW (SHEET 33)
5 COLFAX NW (SHEET 35)
6 COOKSVILLE SW (SHEET 47)
7 COOKSVILLE SE (SHEET 48)
8 COLFAX SW (SHEET 49)

INDEX TO ADJOINING 3.75 MAPS

COOKSVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 34 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COLFAX NW QUADRANGLE
SHEET NUMBER 35 OF 107



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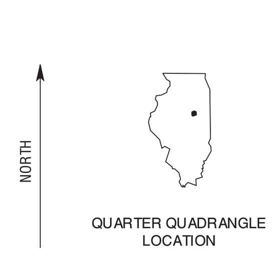

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CHENOA SE (SHEET 22)
2 FAIRBURY SW (SHEET 23)
3 FAIRBURY SE
4 COOKSVILLE NE (SHEET 34)
5 COLFAX NE (SHEET 36)
6 COOKSVILLE SE (SHEET 48)
7 COLFAX SW (SHEET 49)
8 COLFAX SE (SHEET 50)

INDEX TO ADJOINING 3.75 MAPS

COLFAX NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COLFAX NE QUADRANGLE
SHEET NUMBER 36 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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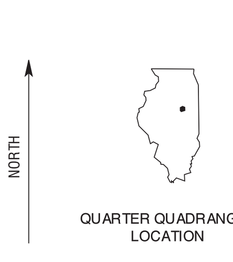
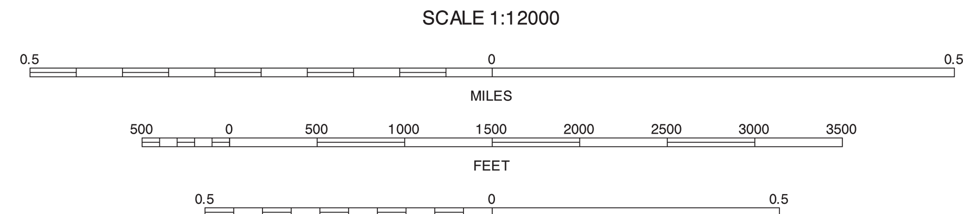


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

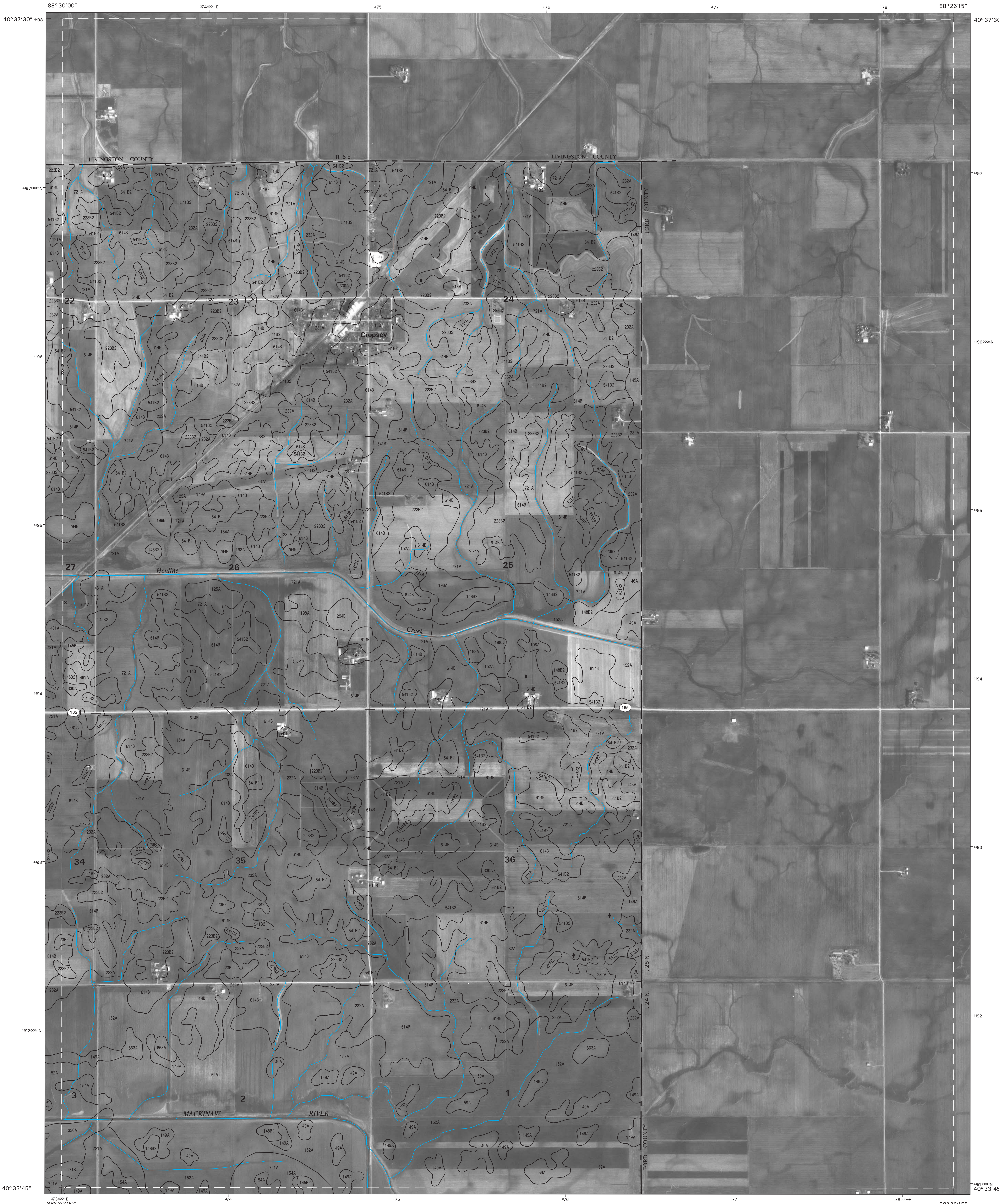
1 FAIRBURY SW (SHEET 23)
2 FAIRBURY SE
3 FORREST SOUTH SW
4 COLFAX NW (SHEET 35)
5 SIBLEY NW (SHEET 37)
6 COLFAX SW (SHEET 49)
7 COLFAX SE (SHEET 50)
8 SIBLEY SW (SHEET 51)

INDEX TO ADJOINING 3.75 MAPS

COLFAX NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SIBLEY NW QUADRANGLE
SHEET NUMBER 37 OF 107



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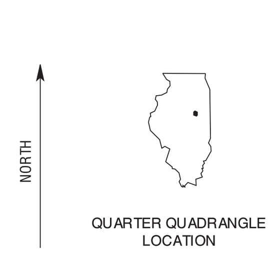
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 — 0 — 0.5

FEET 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 FAIRBURY SE
2 FORREST SOUTH SW
3 FORREST SOUTH SE
4 COLFAX NE (SHEET 36)
5 SIBLEY NE
6 COLFAX SE (SHEET 50)
7 SIBLEY SW (SHEET 51)
8 SIBLEY SE

INDEX TO ADJOINING 3.75 MAPS

SIBLEY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 37 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MACKINAW SE QUADRANGLE
SHEET NUMBER 38 OF 107

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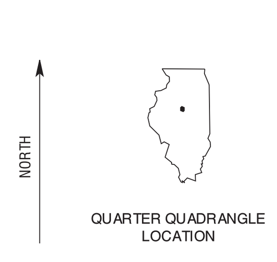
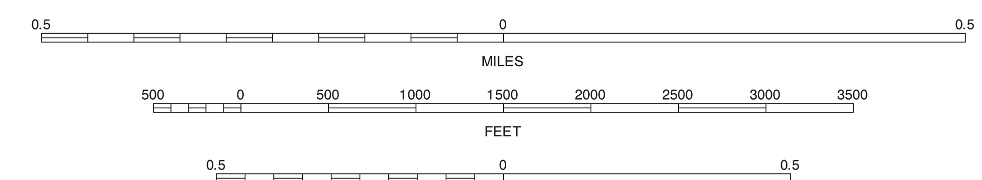


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 MACKINAW NW
2 MACKINAW NE (SHEET 24)
3 DANVERS NW (SHEET 25)
4 MACKINAW SW
5 DANVERS SW (SHEET 39)
6 MINIER NW
7 MINIER NE (SHEET 52)
8 STANFORD NW (SHEET 53)

INDEX TO ADJOINING 3.75 MAPS

MACKINAW SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 38 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
DANVERS SW QUADRANGLE
SHEET NUMBER 39 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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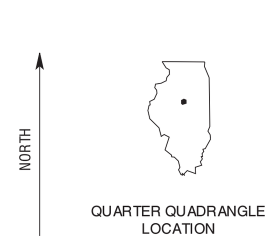

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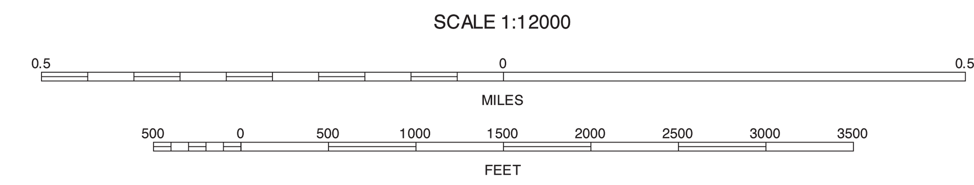


1	2	3
4		5
6	7	8

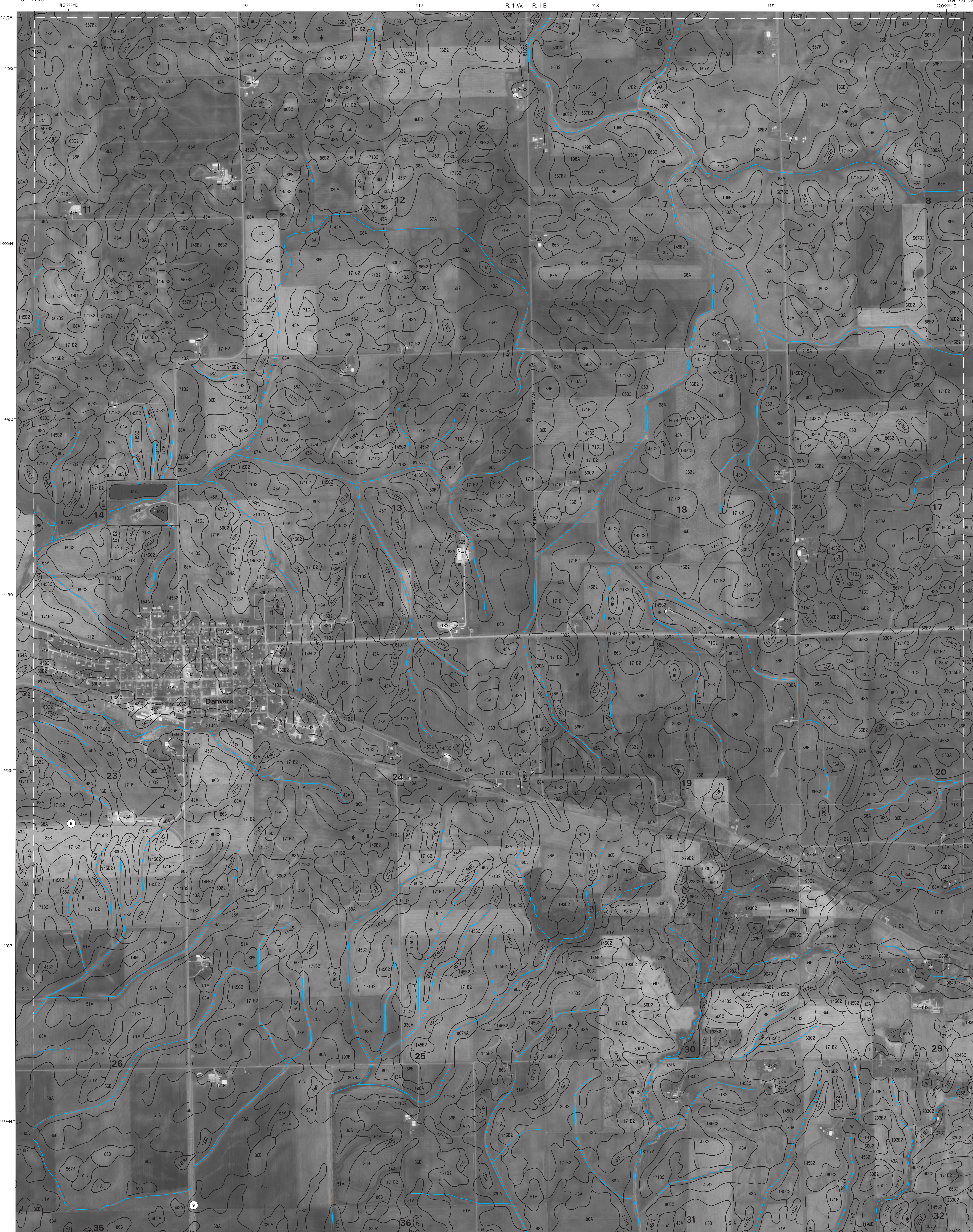
1 MACKINAW NE (SHEET 24)
2 DANVERS NW (SHEET 25)
3 DANVERS NE (SHEET 26)
4 MACKINAW SE (SHEET 38)
5 DANVERS SE (SHEET 40)
6 MINIER NE (SHEET 52)
7 STANFORD NW (SHEET 53)
8 STANFORD NE (SHEET 54)

INDEX TO ADJOINING 3.75 MAPS

DANVERS SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
DANVERS SE QUADRANGLE
SHEET NUMBER 40 OF 107



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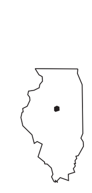
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

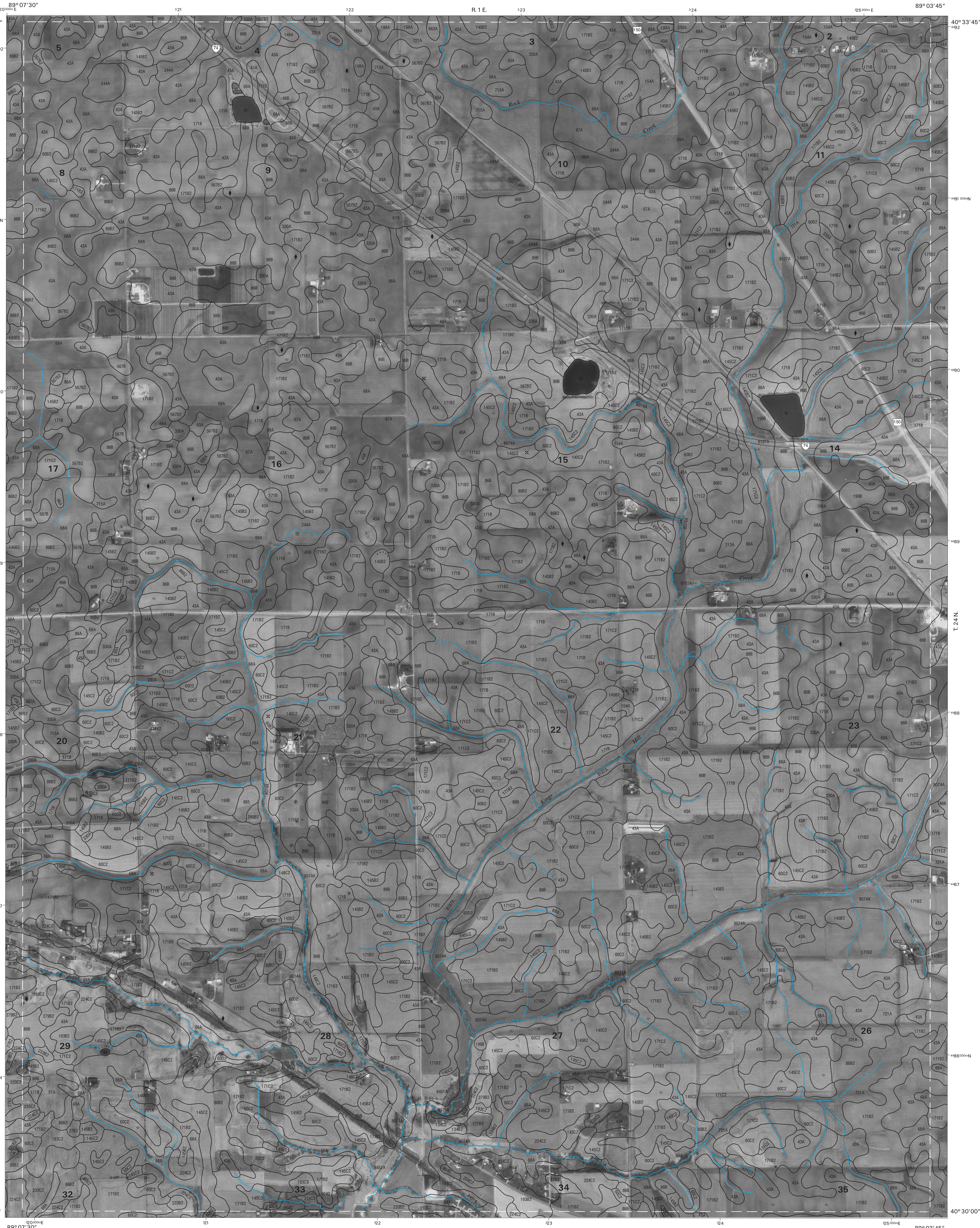
1 DANVERS NW (SHEET 25)
2 DANVERS NE (SHEET 26)
3 NORMAL WEST NW (SHEET 27)
4 DANVERS SW (SHEET 39)
5 NORMAL WEST SW (SHEET 41)
6 STANFORD NW (SHEET 53)
7 STANFORD NE (SHEET 54)
8 BLOOMINGTON WEST NW (SHEET 55)

INDEX TO ADJOINING 3.75 MAPS

DANVERS SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 40 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL WEST SW QUADRANGLE
SHEET NUMBER 41 OF 107



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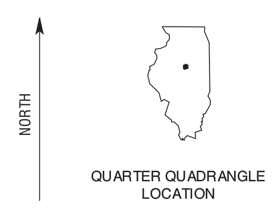
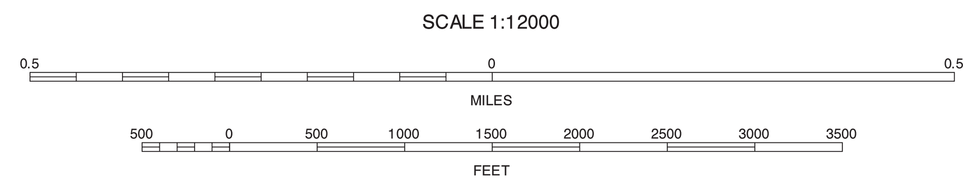


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 DANVERS NE (SHEET 26)
2 NORMAL WEST NW (SHEET 27)
3 NORMAL WEST NE (SHEET 28)
4 DANVERS SE (SHEET 40)
5 NORMAL WEST SE (SHEET 42)
6 STANFORD NE (SHEET 54)
7 BLOOMINGTON WEST NW (SHEET 55)
8 BLOOMINGTON WEST NE (SHEET 56)

INDEX TO ADJOINING 3.75 MAPS

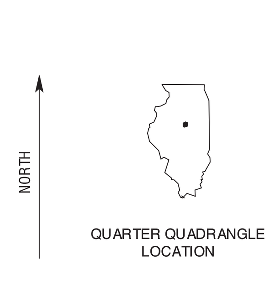
NORMAL WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 41 OF 107

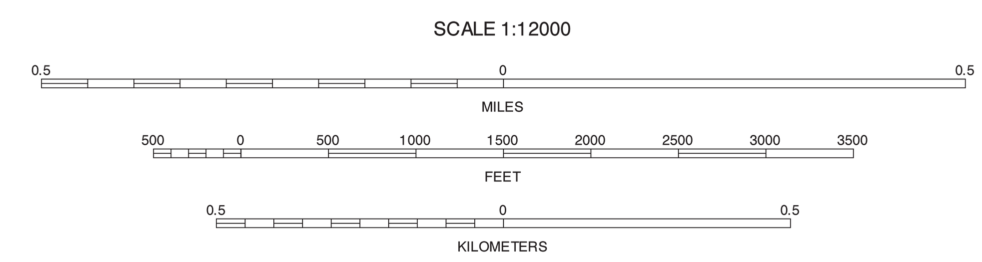
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL WEST SE QUADRANGLE
SHEET NUMBER 42 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.





1	2	3
4		5
6	7	8

1 NORMAL WEST NW (SHEET 27)
2 NORMAL WEST NE (SHEET 28)
3 NORMAL EAST NW (SHEET 29)
4 NORMAL WEST SW (SHEET 41)
5 NORMAL EAST SW (SHEET 43)
6 BLOOMINGTON WEST NW (SHEET 55)
7 BLOOMINGTON WEST NE (SHEET 56)
8 BLOOMINGTON EAST NW (SHEET 57)

INDEX TO ADJOINING 3.75 MAPS

NORMAL WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 42 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL EAST SW QUADRANGLE
SHEET NUMBER 43 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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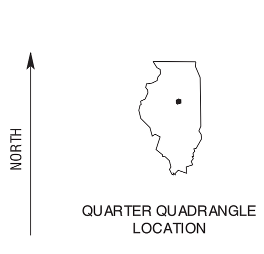
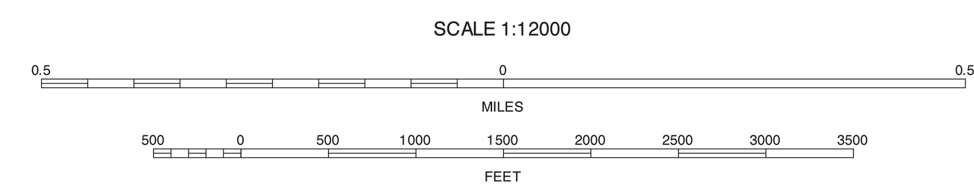


SCALE 1:12000



1	2	3
4		5
6	7	8

1 NORMAL WEST NE (SHEET 28)
2 NORMAL EAST NW (SHEET 29)
3 NORMAL EAST NE (SHEET 30)
4 NORMAL WEST SE (SHEET 42)
5 NORMAL EAST SE (SHEET 44)
6 BLOOMINGTON WEST NE (SHEET 56)
7 BLOOMINGTON EAST NW (SHEET 57)
8 BLOOMINGTON EAST NE (SHEET 58)

INDEX TO ADJOINING 3.75 MAPS

NORMAL EAST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 43 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
NORMAL EAST SE QUADRANGLE
SHEET NUMBER 44 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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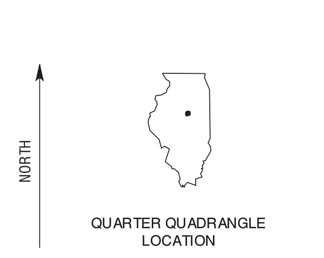
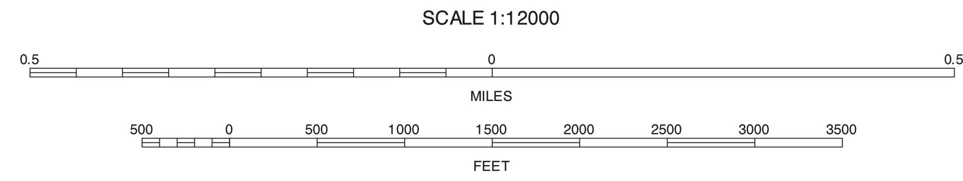


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

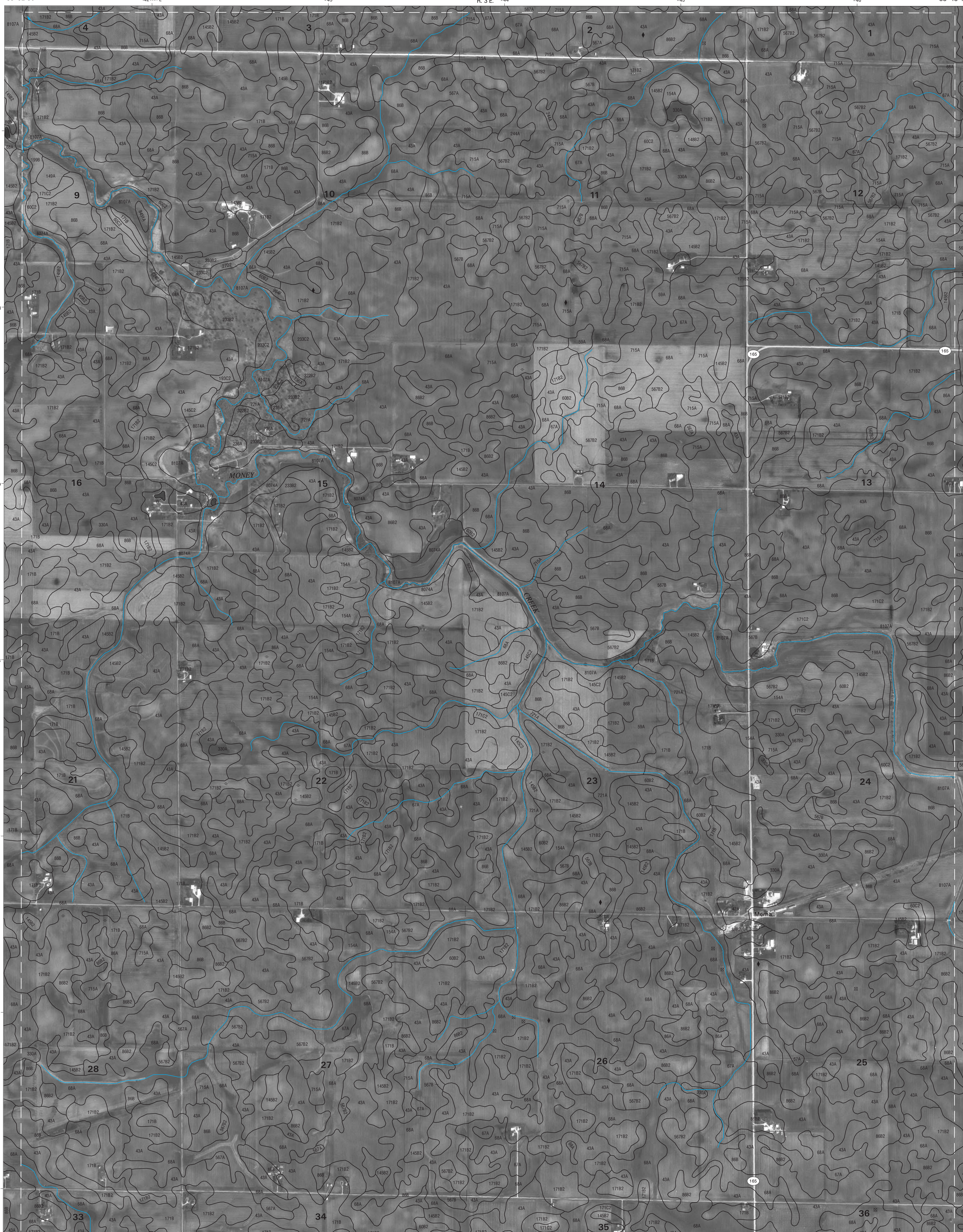
1 NORMAL EAST NW (SHEET 29)
2 NORMAL EAST NE (SHEET 30)
3 MERNA NW (SHEET 31)
4 NORMAL EAST SW (SHEET 43)
5 MERNA SW (SHEET 45)
6 BLOOMINGTON EAST NW (SHEET 57)
7 BLOOMINGTON EAST NE (SHEET 58)
8 HOLDER NW (SHEET 59)

INDEX TO ADJOINING 3.75 MAPS

NORMAL EAST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 44 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MERNA SW QUADRANGLE
SHEET NUMBER 45 OF 107



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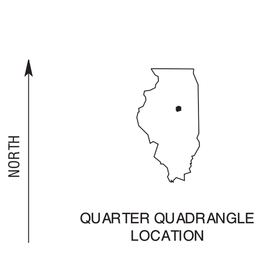


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

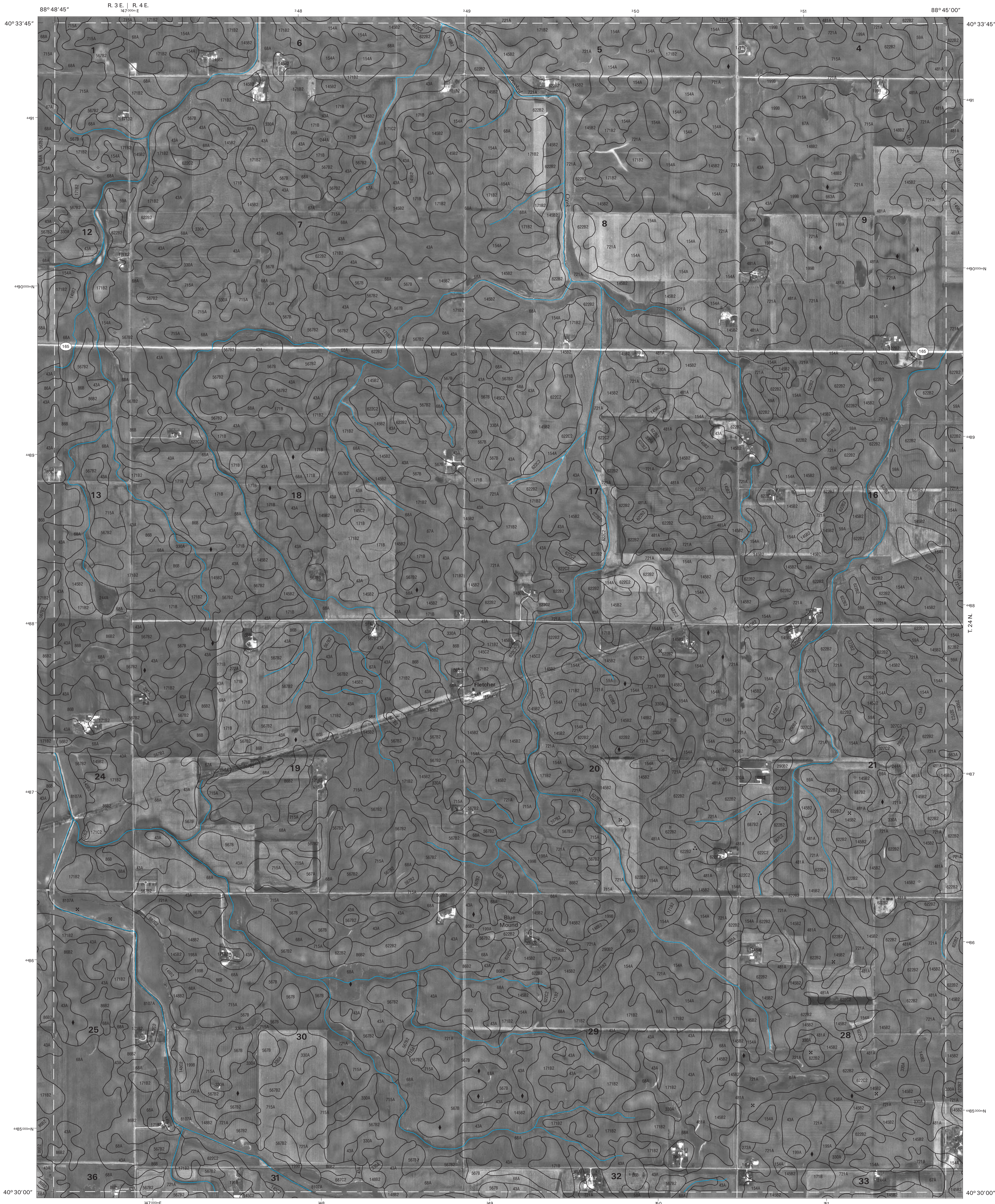
1 NORMAL EAST NE (SHEET 30)
2 MERNA NW (SHEET 31)
3 MERNA NE (SHEET 32)
4 NORMAL EAST SE (SHEET 44)
5 MERNA SE (SHEET 46)
6 BLOOMINGTON EAST NE (SHEET 58)
7 HOLDER NW (SHEET 59)
8 HOLDER NE (SHEET 60)

INDEX TO ADJOINING 3.75 MAPS

MERNA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 45 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MERNA SE QUADRANGLE
SHEET NUMBER 46 OF 107



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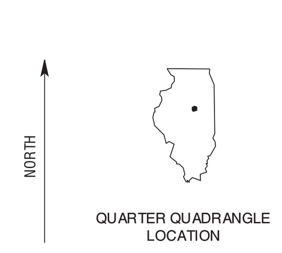


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

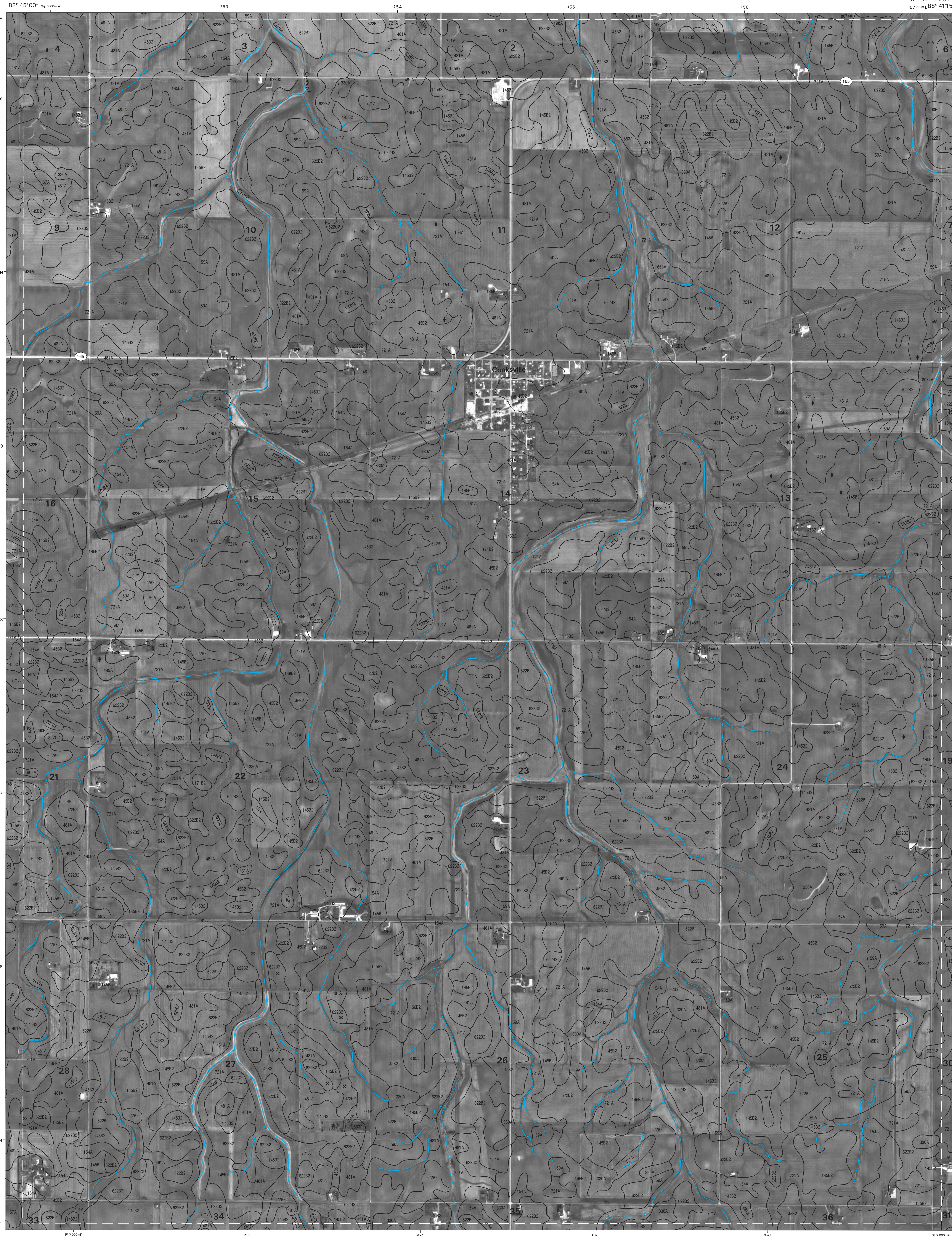
1 MERNA NW (SHEET 31)
2 MERNA NE (SHEET 32)
3 COOKSVILLE NW (SHEET 33)
4 MERNA SW (SHEET 45)
5 COOKSVILLE SW (SHEET 47)
6 HOLDER NW (SHEET 59)
7 HOLDER NE (SHEET 60)
8 ARROWSMITH NW (SHEET 61)

INDEX TO ADJOINING 3.75 MAPS

MERNA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 46 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COOKSVILLE SW QUADRANGLE
SHEET NUMBER 47 OF 107



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

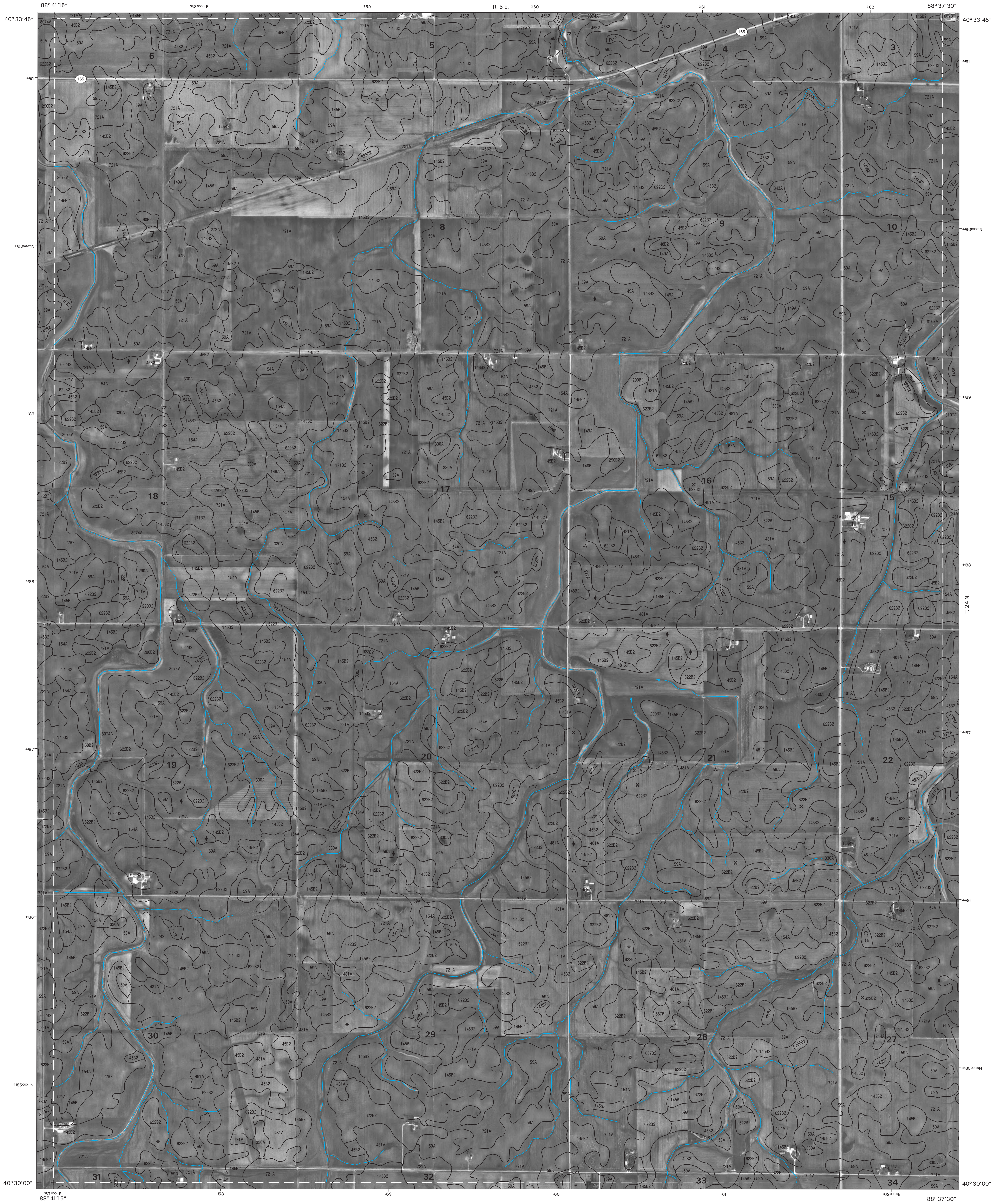
1 MERNA NE (SHEET 32)
2 COOKSVILLE NW (SHEET 33)
3 COOKSVILLE NE (SHEET 34)
4 MERNA SE (SHEET 46)
5 COOKSVILLE SE (SHEET 48)
6 HOLDER NE (SHEET 60)
7 ARROWSMITH NW (SHEET 61)
8 ARROWSMITH NE (SHEET 62)

INDEX TO ADJOINING 3.75 MAPS

COOKSVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 47 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COOKSVILLE SE QUADRANGLE
SHEET NUMBER 48 OF 107



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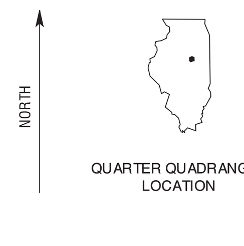
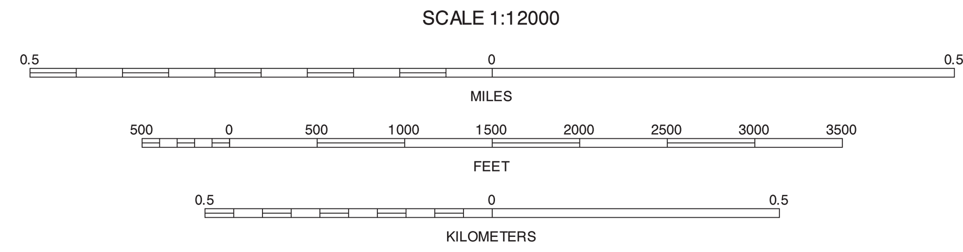


QUARTER QUADRANGLE
LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

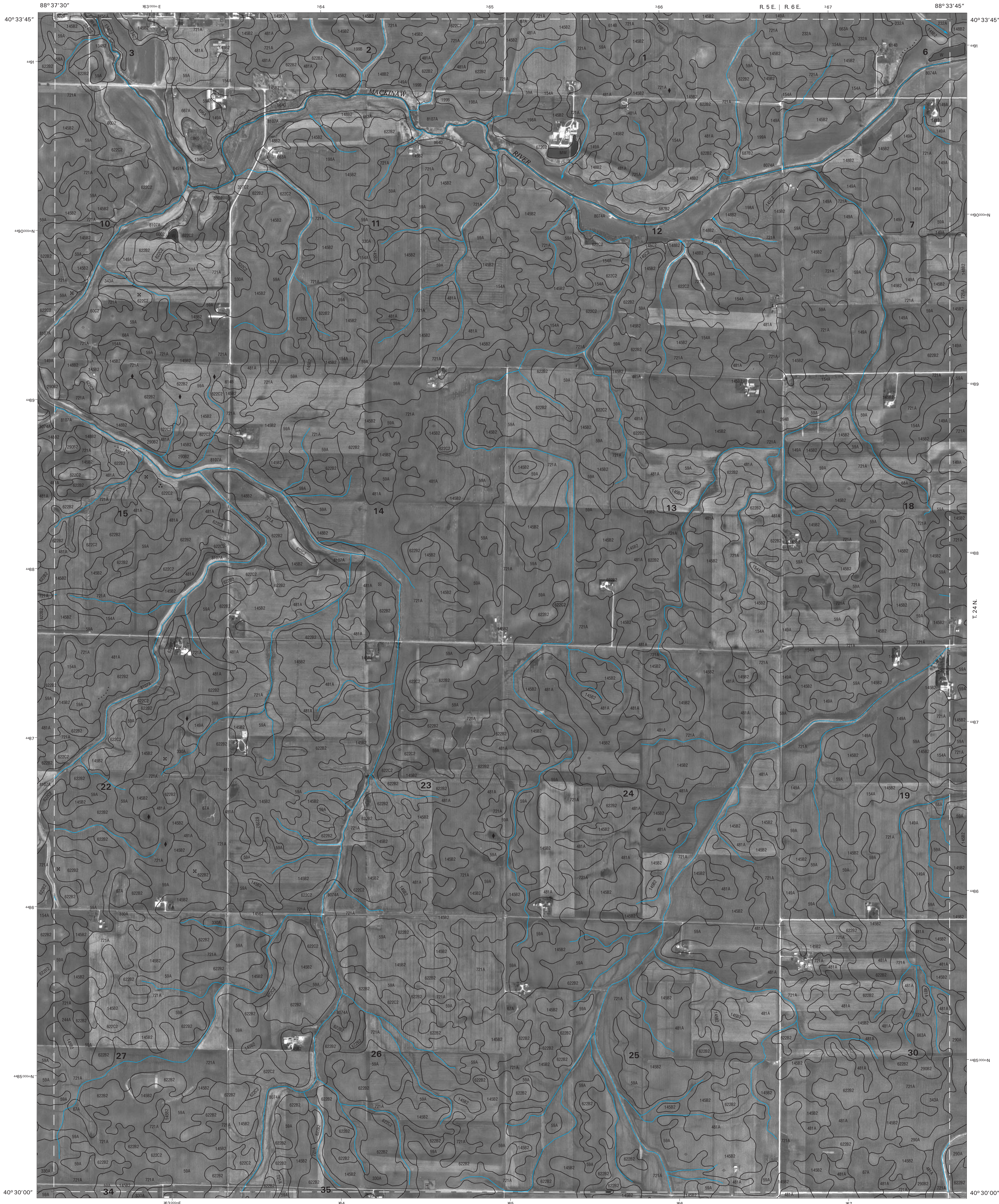
1 COOKSVILLE NW (SHEET 33)
2 COOKSVILLE NE (SHEET 34)
3 COLFAX NW (SHEET 35)
4 COOKSVILLE SW (SHEET 47)
5 COLFAX SW (SHEET 49)
6 ARROWSMITH NW (SHEET 61)
7 ARROWSMITH NE (SHEET 62)
8 SAYBROOK NW (SHEET 63)

INDEX TO ADJOINING 3.75 MAPS

COOKSVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 48 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COLFAX SW QUADRANGLE
SHEET NUMBER 49 OF 107



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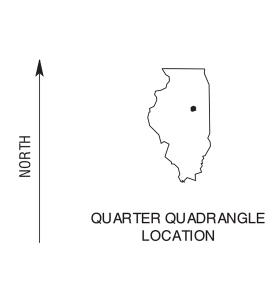
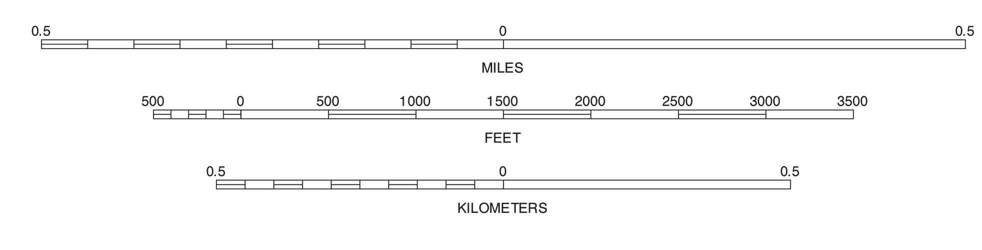


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 COOKSVILLE NE (SHEET 34)
2 COLFAX NW (SHEET 35)
3 COLFAX NE (SHEET 36)
4 COOKSVILLE SE (SHEET 48)
5 COLFAX SE (SHEET 50)
6 ARROWSMITH NE (SHEET 62)
7 SAYBROOK NW (SHEET 63)
8 SAYBROOK NE (SHEET 64)

INDEX TO ADJOINING 3.75 MAPS

COLFAX SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 49 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
COLFAX SE QUADRANGLE
SHEET NUMBER 50 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

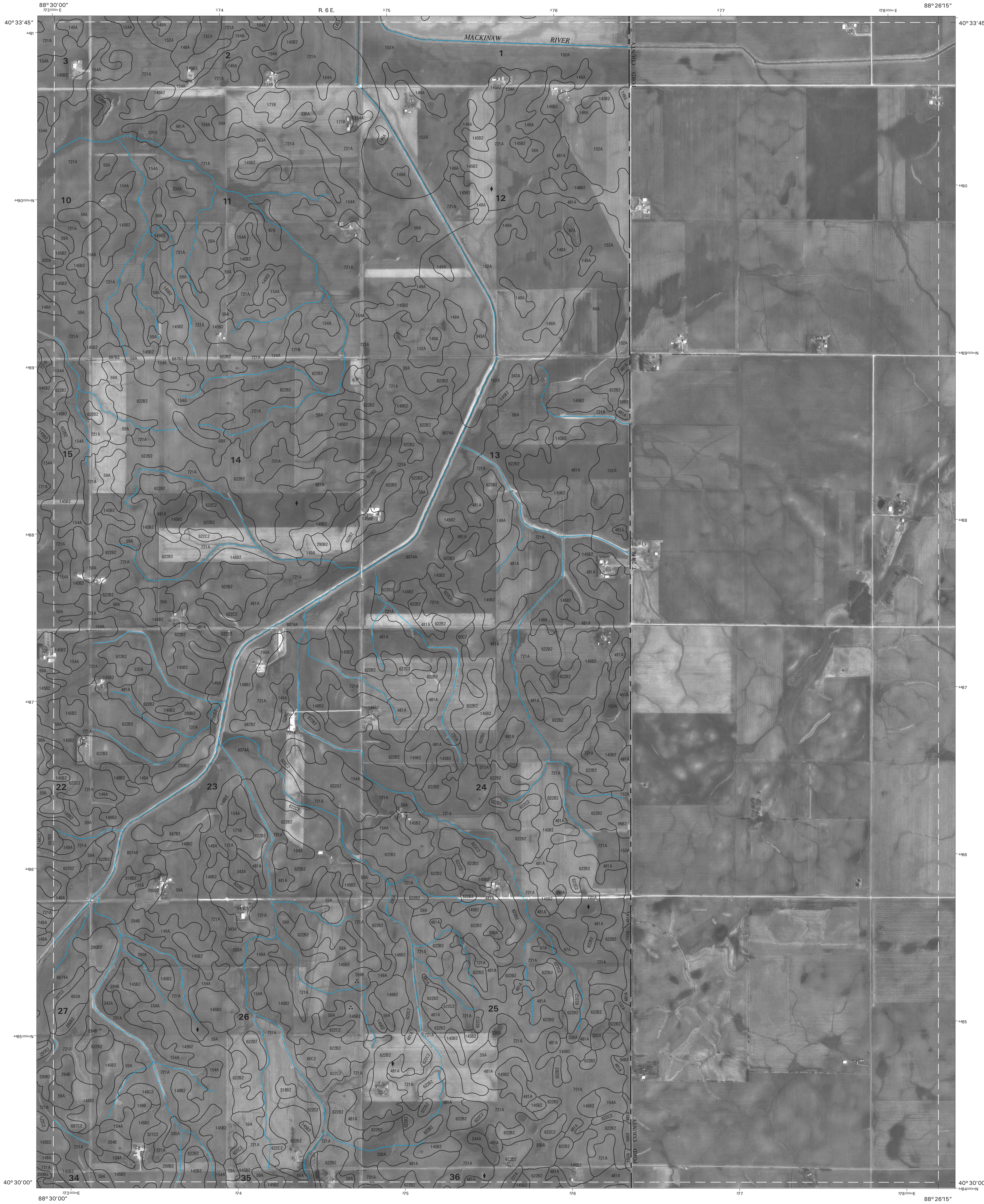
INDEX TO ADJOINING 3.75 MAPS

1 COLFAX NW (SHEET 35)
2 COLFAX NE (SHEET 36)
3 SIBLEY NW (SHEET 37)
4 COLFAX SW (SHEET 49)
5 SIBLEY SW (SHEET 51)
6 SAYBROOK NW (SHEET 63)
7 SAYBROOK NE (SHEET 64)
8 GIBSON CITY WEST NW (SHEET 65)

COLFAX SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 50 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SIBLEY SW QUADRANGLE
SHEET NUMBER 51 OF 107



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 COLFAX NE (SHEET 36)
2 SIBLEY NW (SHEET 37)
3 SIBLEY NE
4 COLFAX SE (SHEET 50)
5 SIBLEY SE
6 SAYBROOK NE (SHEET 64)
7 GIBSON CITY WEST NW (SHEET 65)
8 GIBSON CITY WEST NE

INDEX TO ADJOINING 3.75 MAPS

SIBLEY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 51 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MINIER NE QUADRANGLE
SHEET NUMBER 52 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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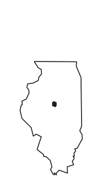
NORTH



QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

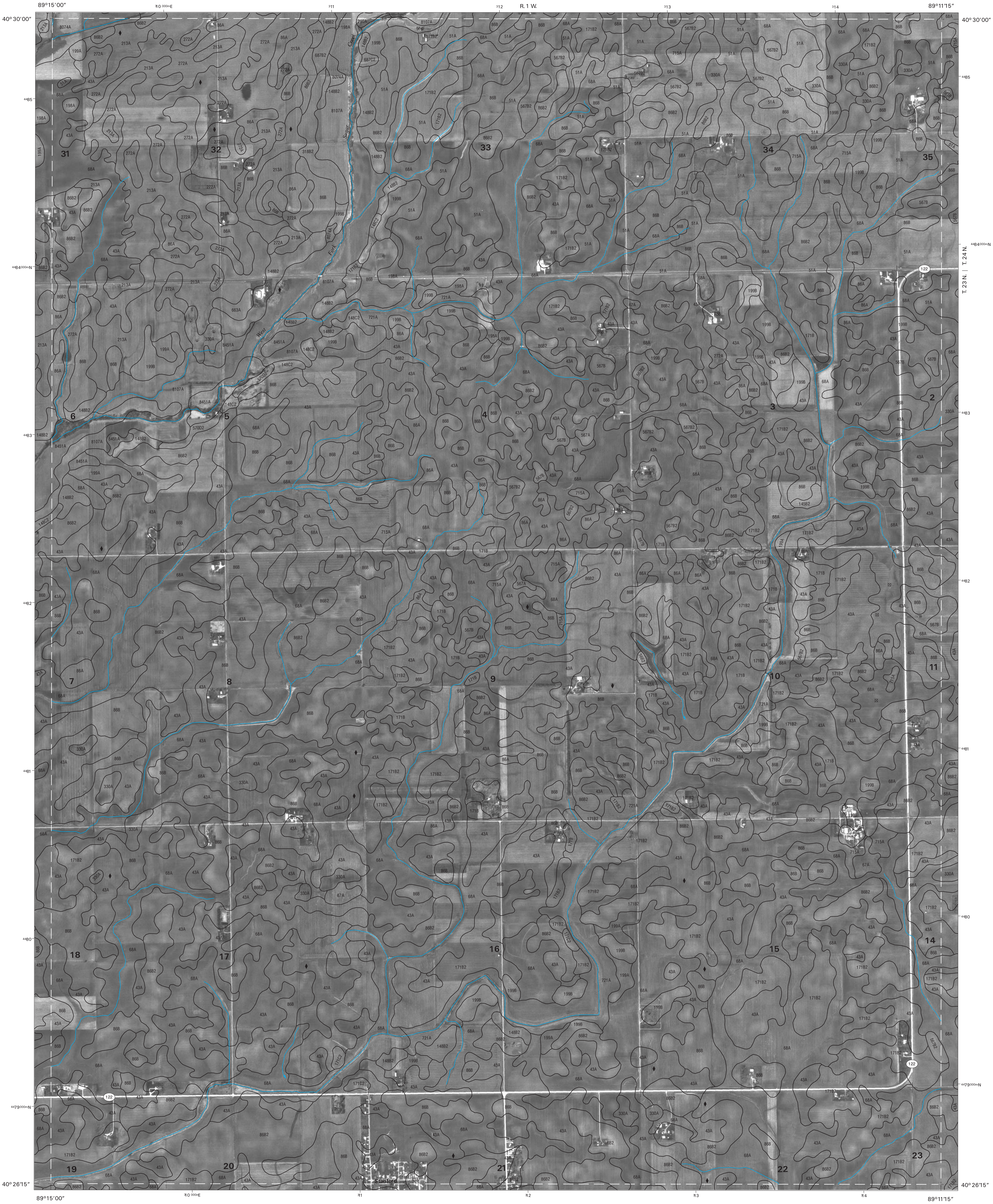
1 MACKINAW SW
2 MACKINAW SE (SHEET 38)
3 DANVERS SW (SHEET 39)
4 MINIER NW
5 STANFORD NW (SHEET 53)
6 MINIER SW
7 MINIER SE (SHEET 66)
8 STANFORD SW (SHEET 67)

INDEX TO ADJOINING 3.75 MAPS

MINIER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 52 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
STANFORD NW QUADRANGLE
SHEET NUMBER 53 OF 107



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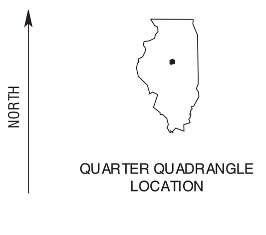
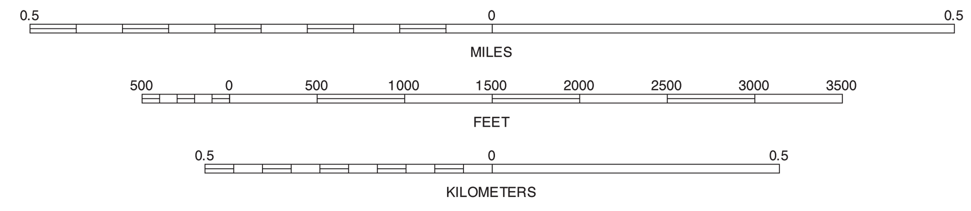


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1 MACKINAW SE (SHEET 38)
2 DANVERS SW (SHEET 39)
3 DANVERS SE (SHEET 40)
4 MINIER NE (SHEET 52)
5 STANFORD NE (SHEET 54)
6 MINIER SE (SHEET 66)
7 STANFORD SW (SHEET 67)
8 STANFORD SE (SHEET 68)

INDEX TO ADJOINING 3.75 MAPS

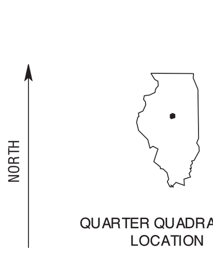
STANFORD NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 53 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
STANFORD NE QUADRANGLE
SHEET NUMBER 54 OF 107

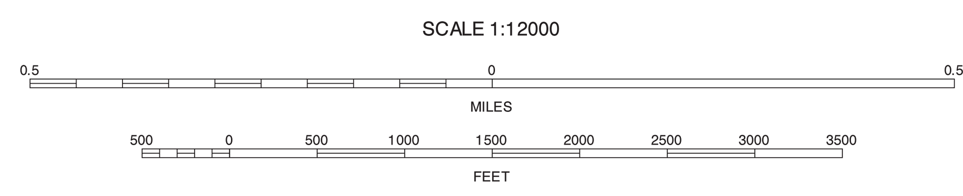
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 DANVERS SW (SHEET 39)
2 DANVERS SE (SHEET 40)
3 NORMAL WEST SW (SHEET 41)
4 STANFORD NW (SHEET 53)
5 BLOOMINGTON WEST NW (SHEET 55)
6 STANFORD SW (SHEET 67)
7 STANFORD SE (SHEET 68)
8 BLOOMINGTON WEST SW (SHEET 69)

INDEX TO ADJOINING 3.75 MAPS

STANFORD NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 54 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON WEST NW QUADRANGLE

89° 07′30″ — 89° 03′45″ — 40° 30′00″ — 40° 26′15″

320000mE — 321 — 322 — 323 — 324 — 325000mE

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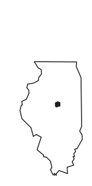
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 DANVERS SE (SHEET 40)
2 NORMAL WEST SW (SHEET 41)
3 NORMAL WEST SE (SHEET 42)
4 STANFORD NE (SHEET 54)
5 BLOOMINGTON WEST NE (SHEET 56)
6 STANFORD SE (SHEET 68)
7 BLOOMINGTON WEST SW (SHEET 69)
8 BLOOMINGTON WEST SE (SHEET 70)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON WEST NW, ILLINOIS
3.75 MINUTE SERIES

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON WEST NE QUADRANGLE
SHEET NUMBER 56 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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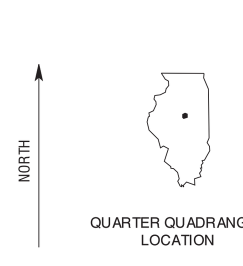

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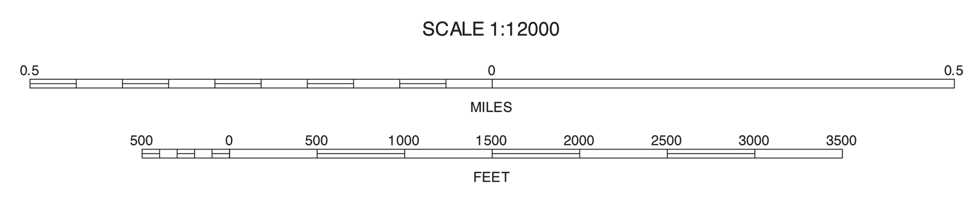


1	2	3
4		5
6	7	8

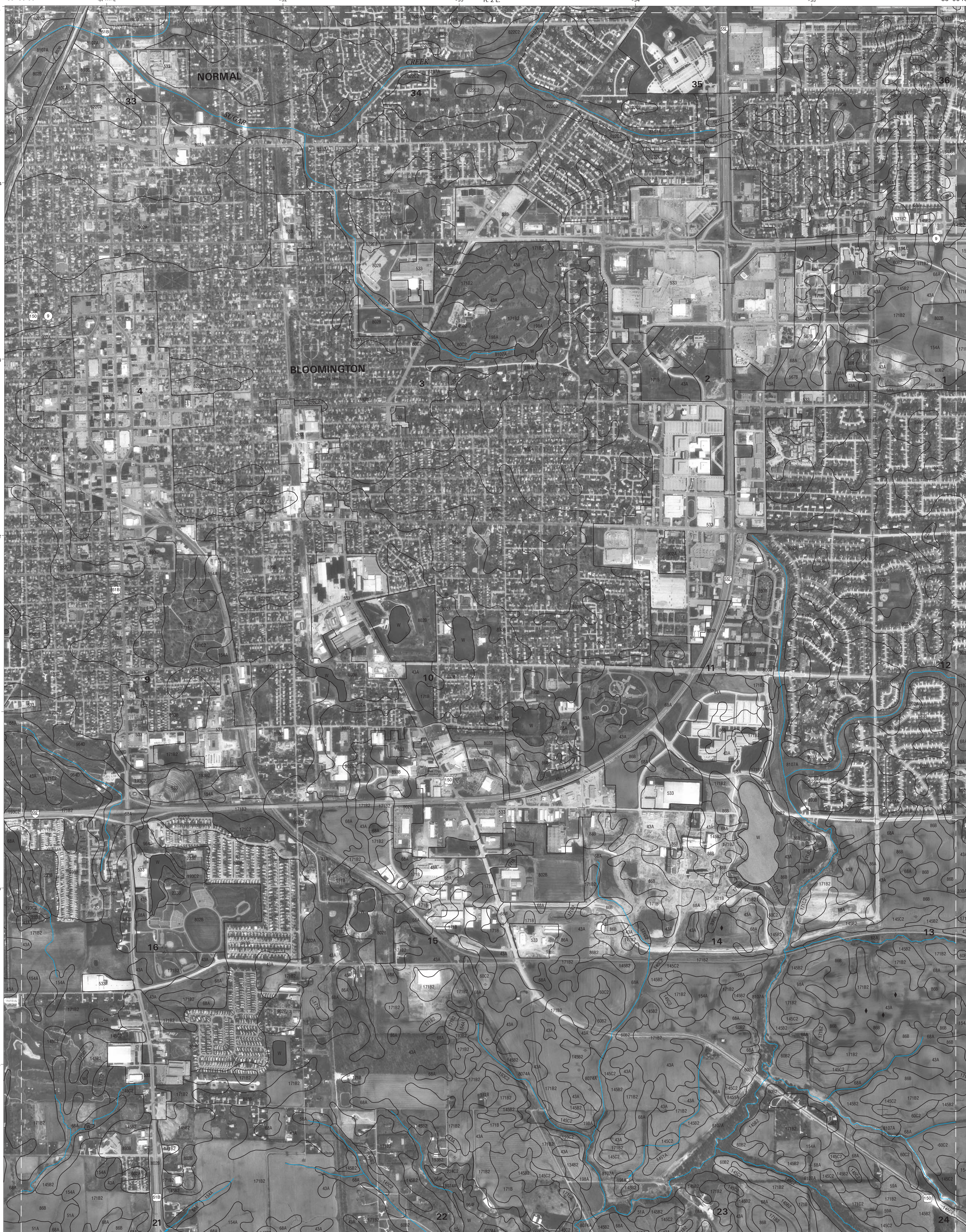
1 NORMAL WEST SW (SHEET 41)
2 NORMAL WEST SE (SHEET 42)
3 NORMAL EAST SW (SHEET 43)
4 BLOOMINGTON WEST NW (SHEET 55)
5 BLOOMINGTON EAST NW (SHEET 57)
6 BLOOMINGTON WEST SW (SHEET 69)
7 BLOOMINGTON WEST SE (SHEET 70)
8 BLOOMINGTON EAST SW (SHEET 71)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON WEST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 56 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON EAST NW QUADRANGLE
SHEET NUMBER 57 OF 107



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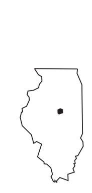
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 NORMAL WEST SE (SHEET 42)
2 NORMAL EAST SW (SHEET 43)
3 NORMAL EAST SE (SHEET 44)
4 BLOOMINGTON WEST NE (SHEET 56)
5 BLOOMINGTON EAST NE (SHEET 58)
6 BLOOMINGTON WEST SE (SHEET 70)
7 BLOOMINGTON EAST SW (SHEET 71)
8 BLOOMINGTON EAST SE (SHEET 72)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON EAST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 57 OF 107

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

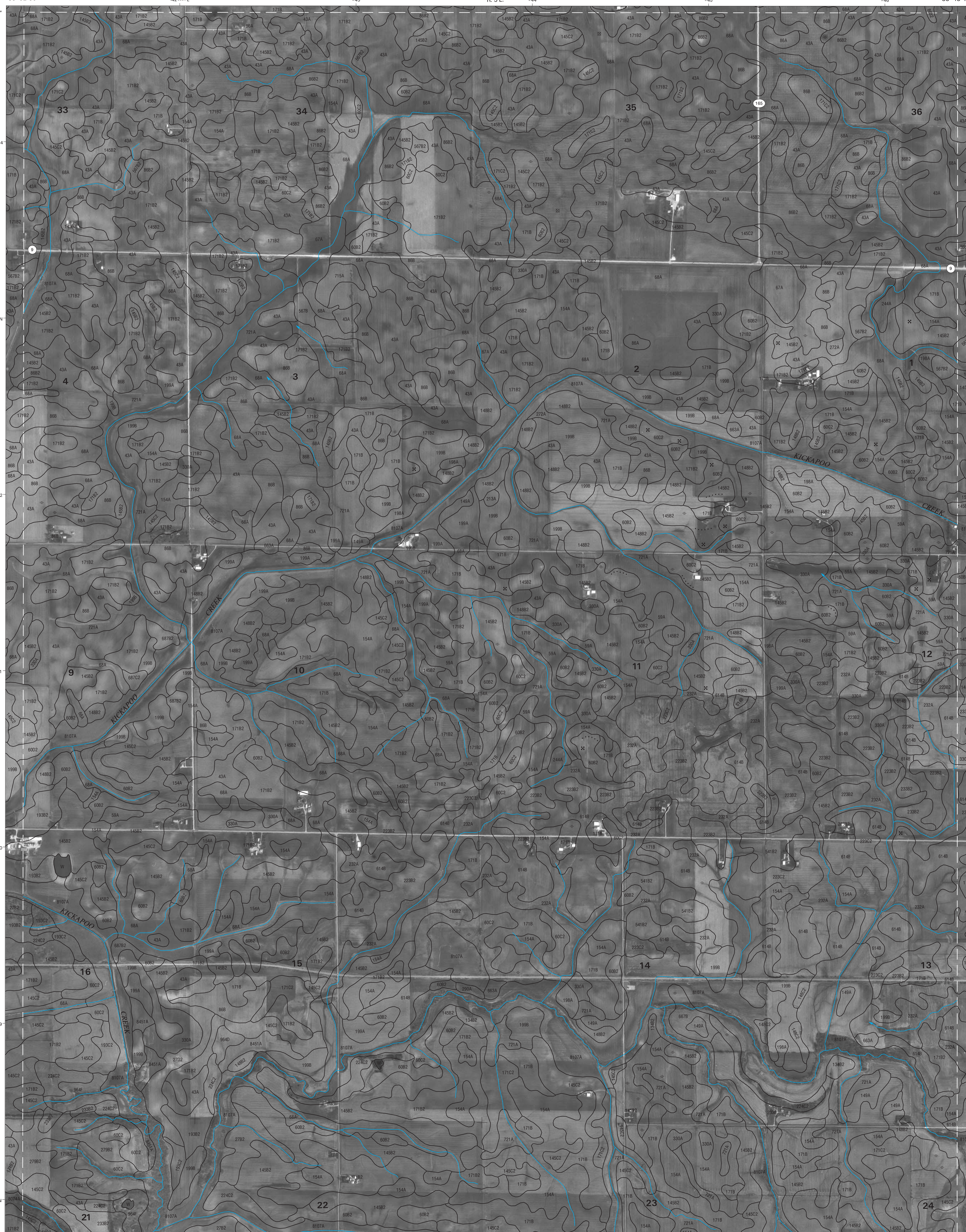
1	2	3
4		5
6	7	8

1 NORMAL EAST SW (SHEET 43)
2 NORMAL EAST SE (SHEET 44)
3 MERNA SW (SHEET 45)
4 BLOOMINGTON EAST NW (SHEET 57)
5 HOLDER NW (SHEET 59)
6 BLOOMINGTON EAST SW (SHEET 71)
7 BLOOMINGTON EAST SE (SHEET 72)
8 HOLDER SW (SHEET 73)

INDEX TO ADJOINING 3.75 MAPS

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HOLDER NW QUADRANGLE
SHEET NUMBER 59 OF 107



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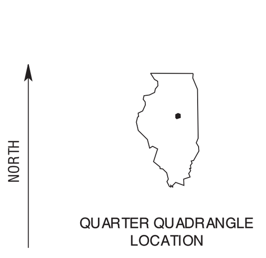


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

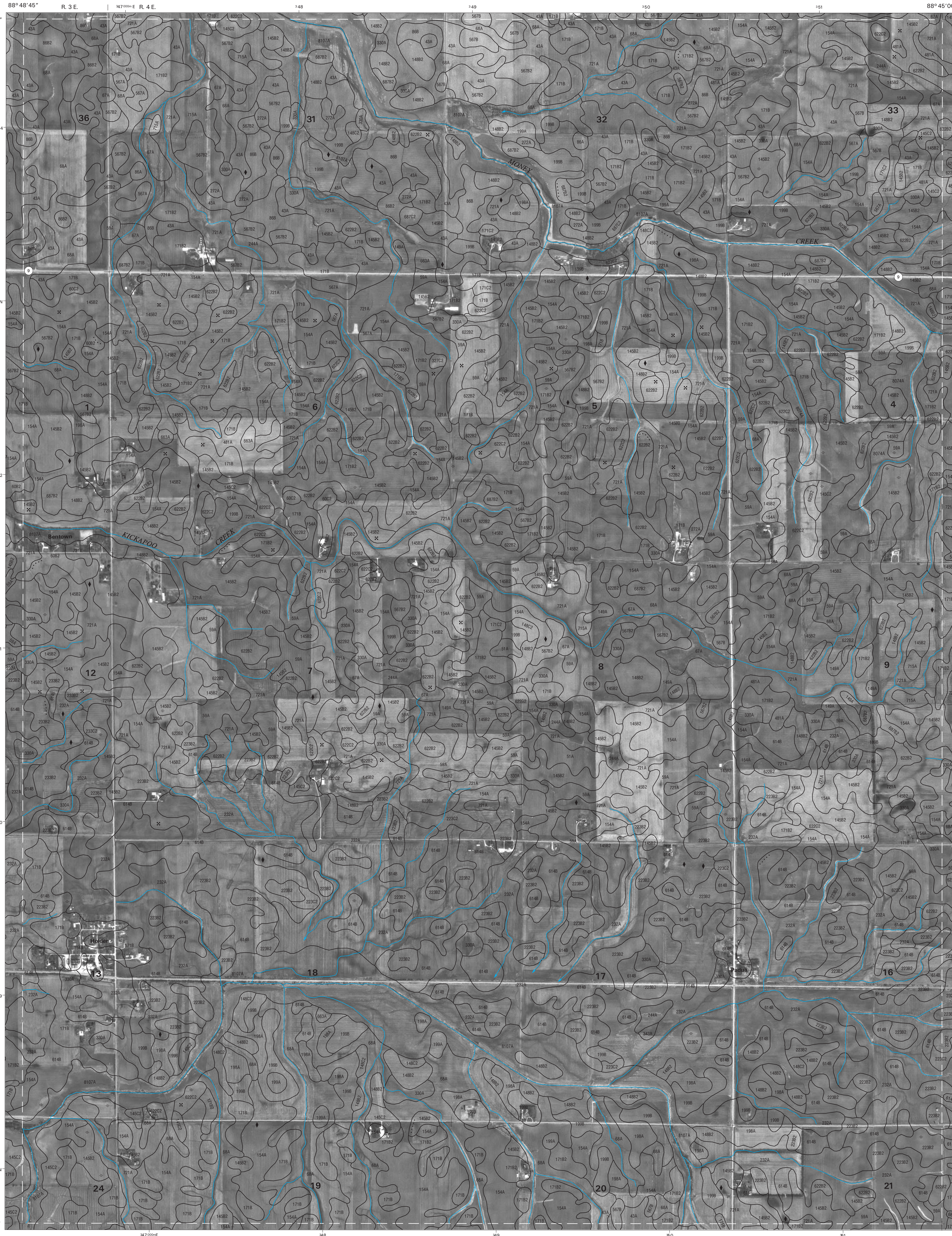
1 NORMAL EAST SE (SHEET 44)
2 MERNA SW (SHEET 45)
3 MERNA SE (SHEET 46)
4 BLOOMINGTON EAST NE (SHEET 58)
5 HOLDER NE (SHEET 60)
6 BLOOMINGTON EAST SE (SHEET 72)
7 HOLDER SW (SHEET 73)
8 HOLDER SE (SHEET 74)

INDEX TO ADJOINING 3.75 MAPS

HOLDER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 59 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HOLDER NE QUADRANGLE
SHEET NUMBER 60 OF 107



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

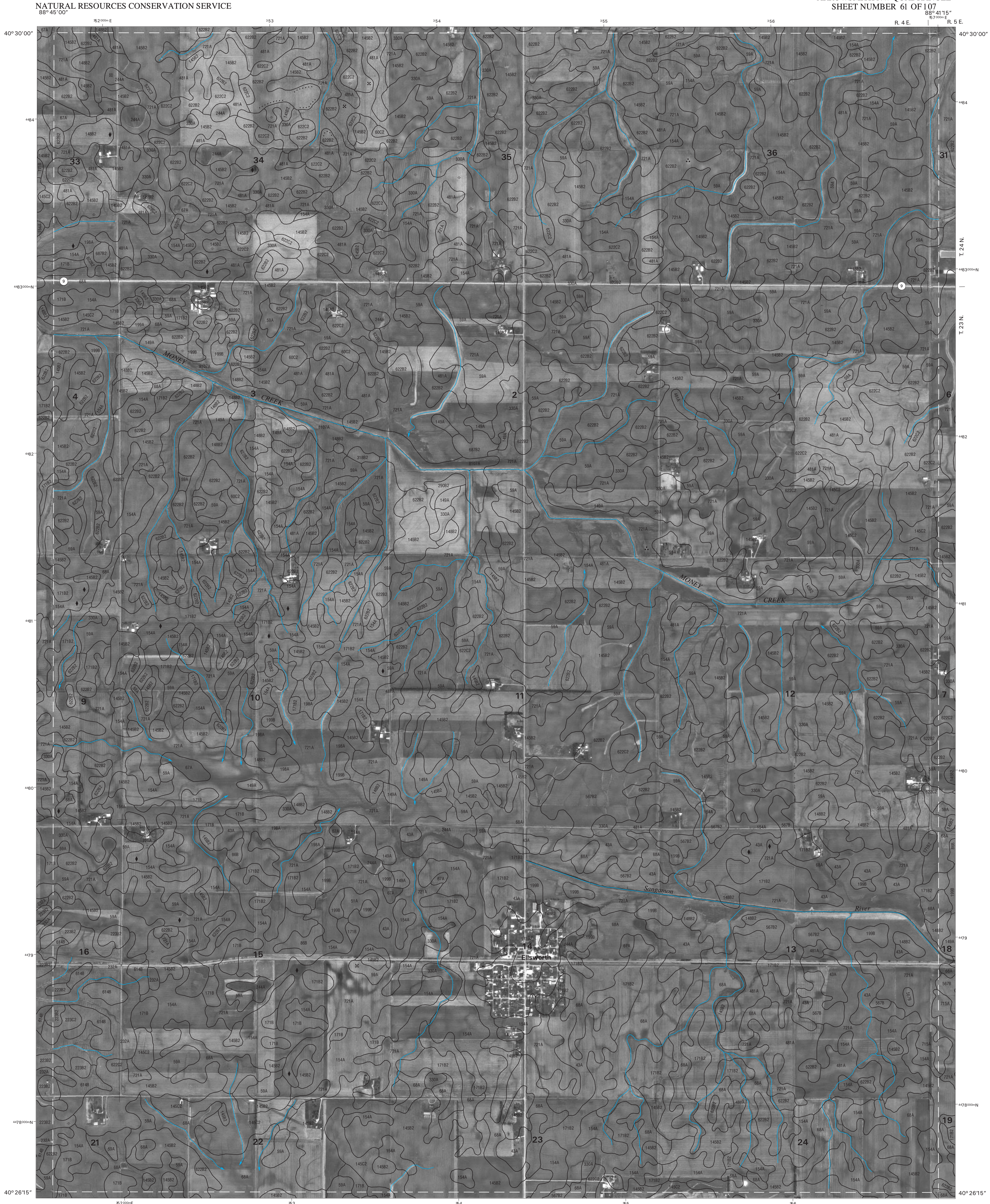
1	2	3
4		5
6	7	8

1 MERNA SW (SHEET 45)
2 MERNA SE (SHEET 46)
3 COOKSVILLE SW (SHEET 47)
4 HOLDER NW (SHEET 59)
5 ARROWSMITH NW (SHEET 61)
6 HOLDER SW (SHEET 73)
7 HOLDER SE (SHEET 74)
8 ARROWSMITH SW (SHEET 75)

INDEX TO ADJOINING 3.75 MAPS

HOLDER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 60 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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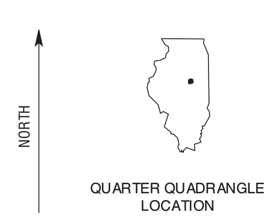

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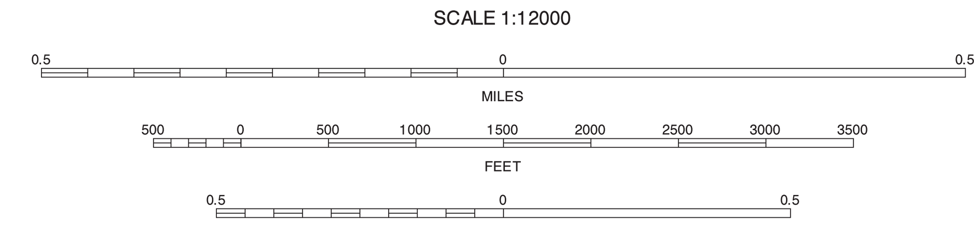
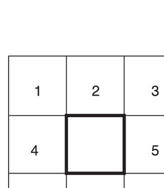




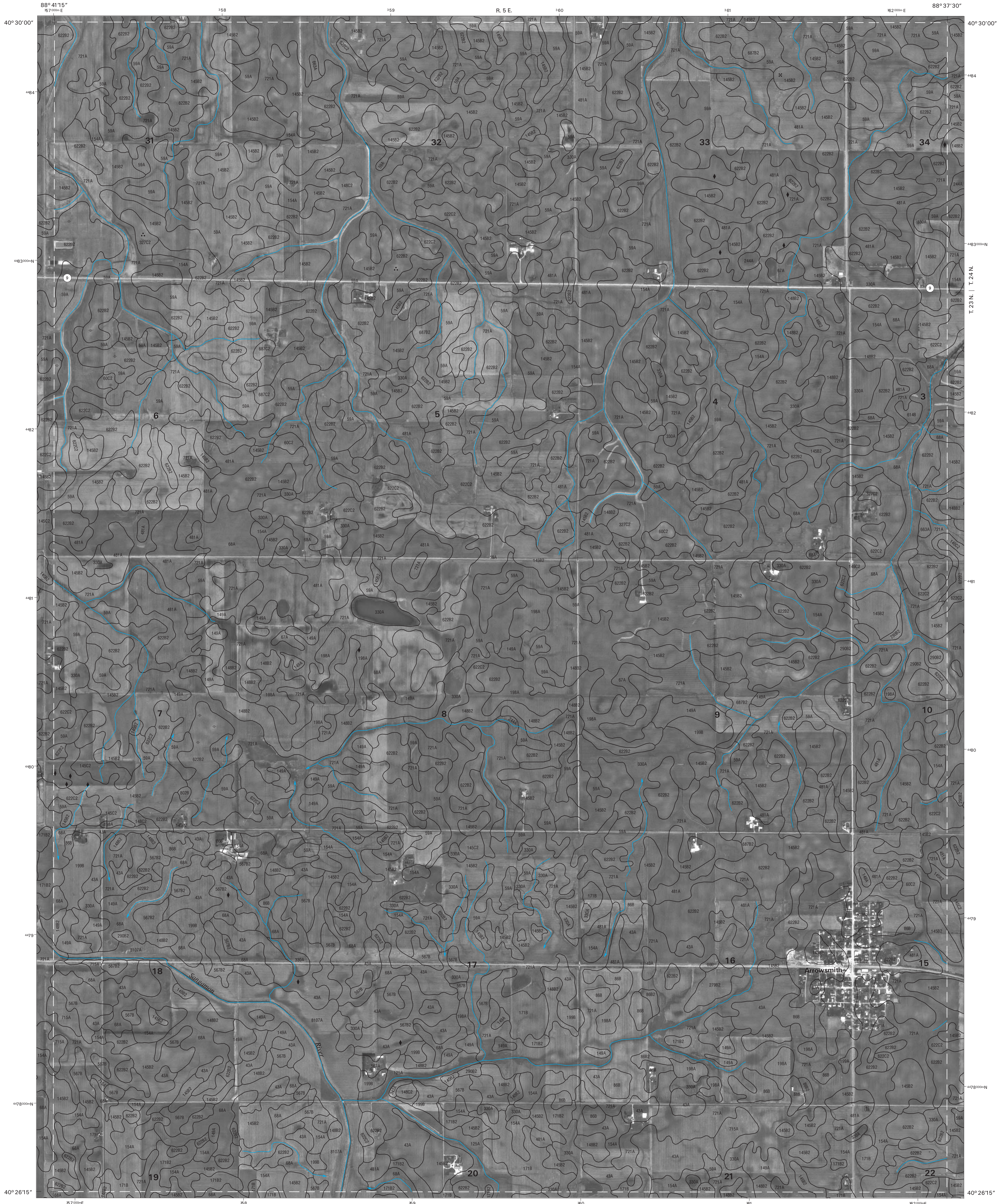
1 MERNA SE (SHEET 46)
2 COOKSVILLE SW (SHEET 47)
3 COOKSVILLE SE (SHEET 48)
4 HOLDER NE (SHEET 60)
5 ARROWSMITH NE (SHEET 62)
6 HOLDER SE (SHEET 74)
7 ARROWSMITH SW (SHEET 75)
8 ARROWSMITH SE (SHEET 76)

INDEX TO ADJOINING 3.75 MAPS

ARROWSMITH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 61 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
ARROWSMITH NE QUADRANGLE
SHEET NUMBER 62 OF 107



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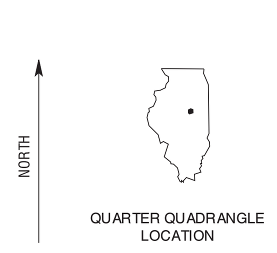
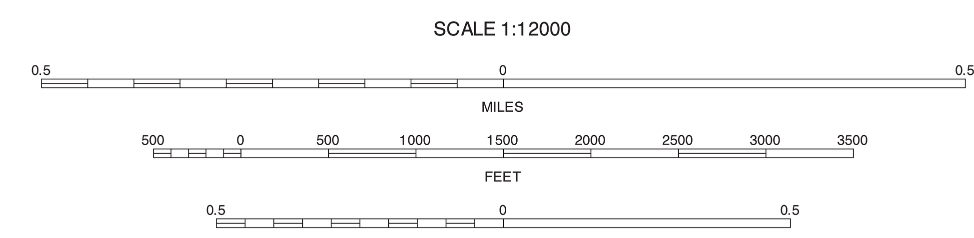
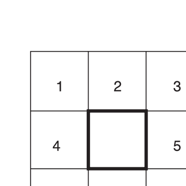


QUARTER QUADRANGLE
LOCATION

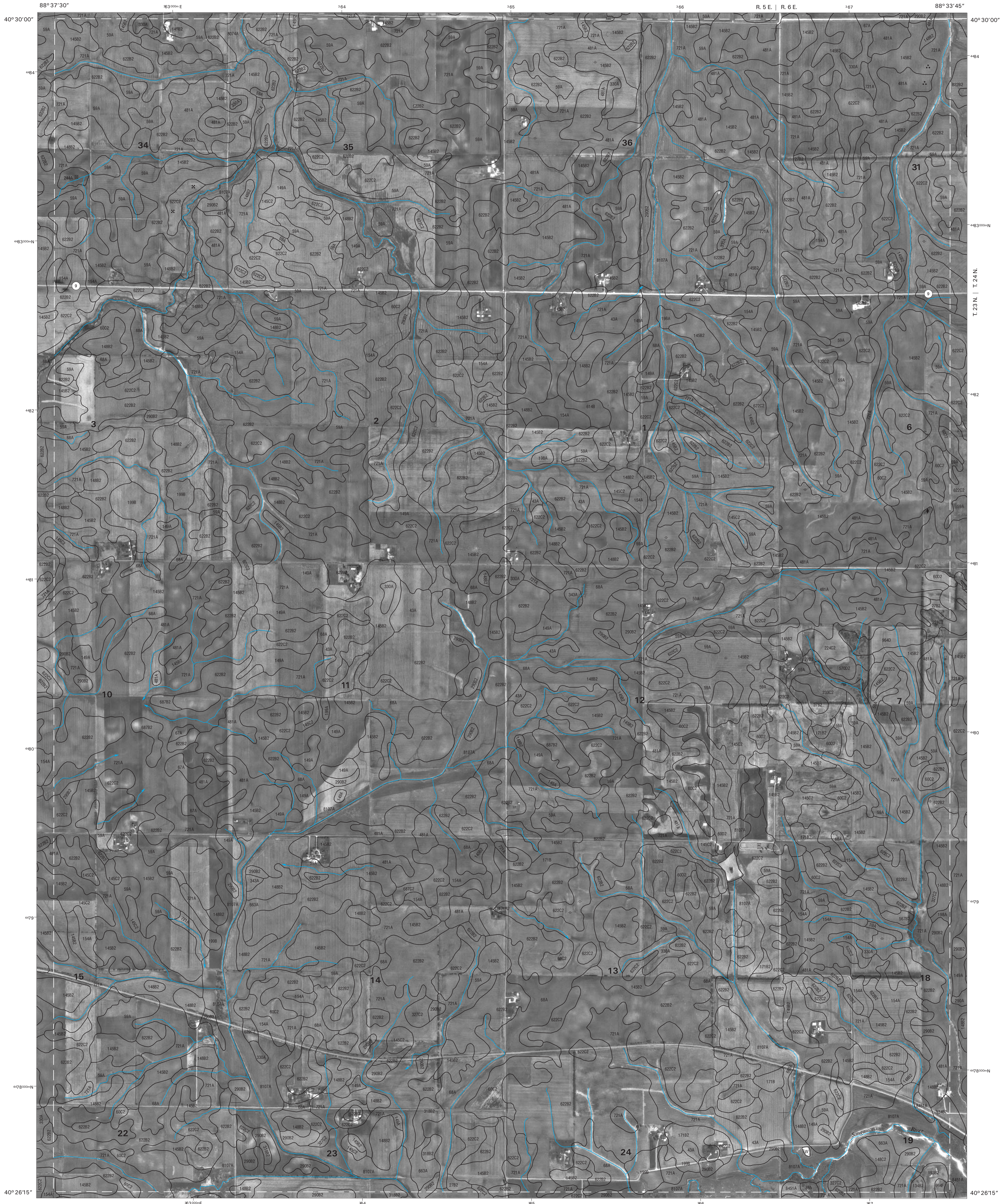




1 COOKSVILLE SW (SHEET 47)
2 COOKSVILLE SE (SHEET 48)
3 COLFAX SW (SHEET 49)
4 ARROWSMITH NW (SHEET 61)
5 SAYBROOK NW (SHEET 63)
6 ARROWSMITH SW (SHEET 75)
7 ARROWSMITH SE (SHEET 76)
8 SAYBROOK SW (SHEET 77)

INDEX TO ADJOINING 3.75 MAPS

ARROWSMITH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 62 OF 107



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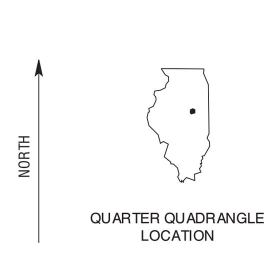


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 COOKSVILLE SE (SHEET 48)
2 COLFAX SW (SHEET 49)
3 COLFAX SE (SHEET 50)
4 ARROWSMITH NE (SHEET 62)
5 SAYBROOK NE (SHEET 64)
6 ARROWSMITH SE (SHEET 76)
7 SAYBROOK SW (SHEET 77)
8 SAYBROOK SE (SHEET 78)

INDEX TO ADJOINING 3.75 MAPS

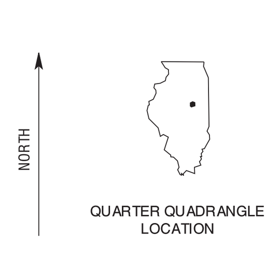
SAYBROOK NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 63 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SAYBROOK NE QUADRANGLE
SHEET NUMBER 64 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



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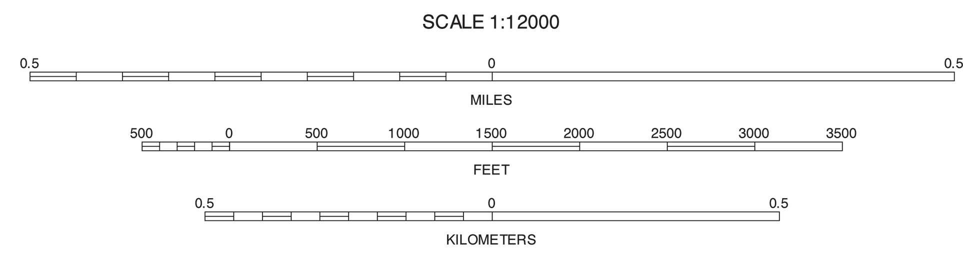


1	2	3
4		5
6	7	8

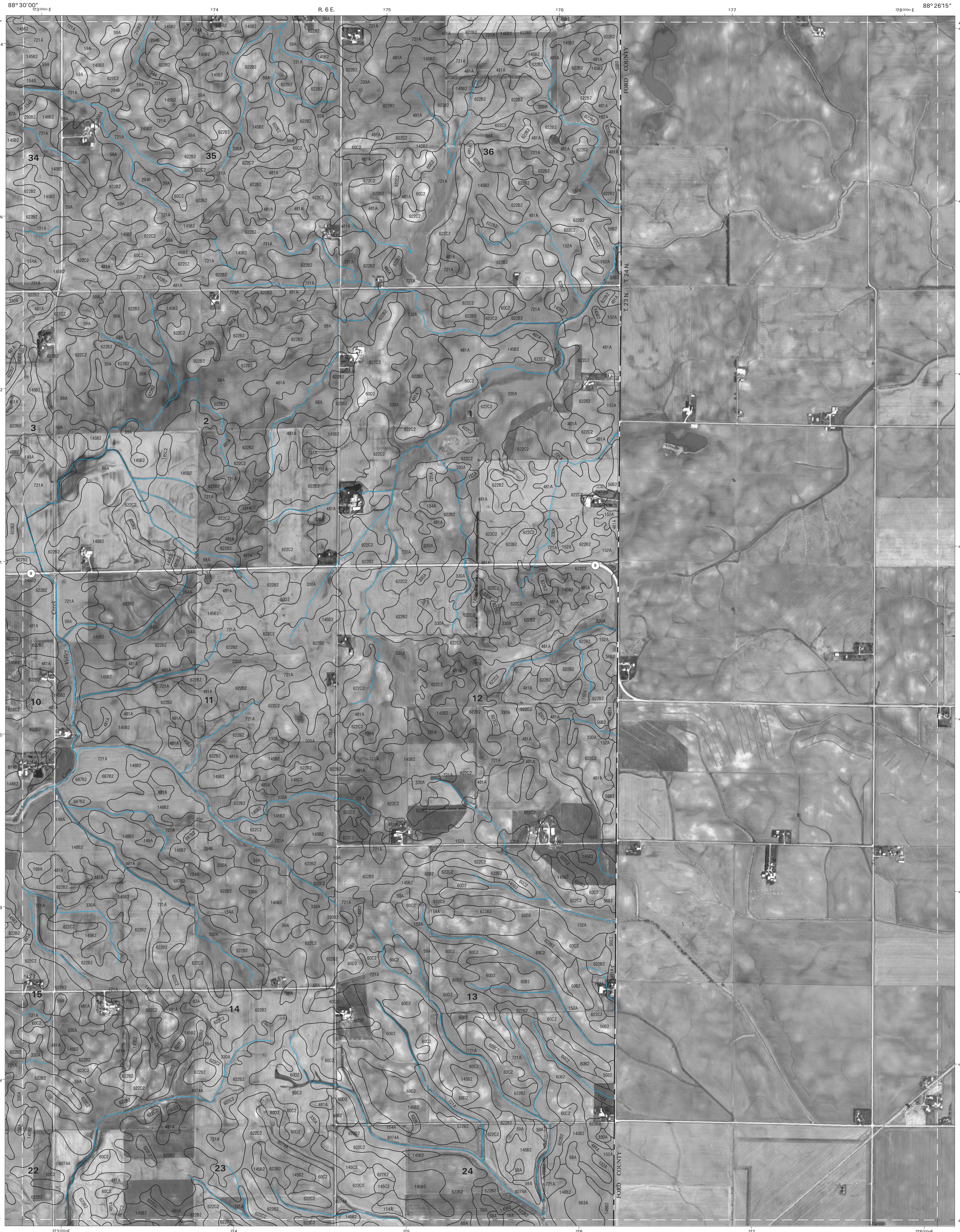
1 COLFAX SW (SHEET 49)
2 COLFAX SE (SHEET 50)
3 SIBLEY SW (SHEET 51)
4 SAYBROOK NW (SHEET 63)
5 GIBSON CITY WEST NW (SHEET 65)
6 SAYBROOK SW (SHEET 77)
7 SAYBROOK SE (SHEET 78)
8 GIBSON CITY WEST SW (SHEET 79)

INDEX TO ADJOINING 3.75 MAPS

SAYBROOK NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 64 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GIBSON CITY WEST NW QUADRANGLE
SHEET NUMBER 65 OF 107



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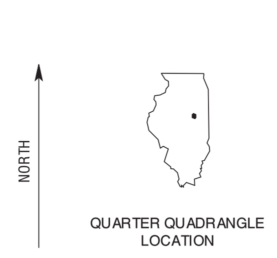

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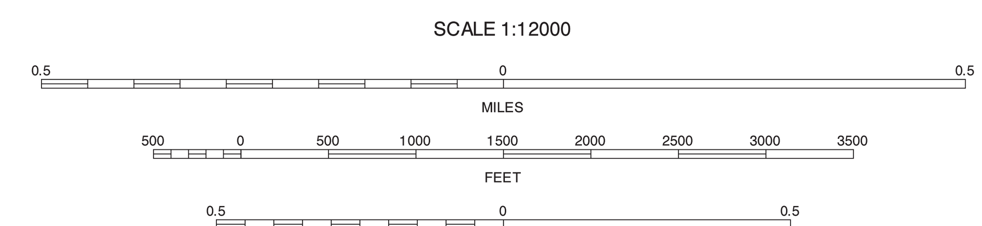

1	2	3
4		5
6	7	8

1 COLFAX SE (SHEET 50)
2 SIBLEY SW (SHEET 51)
3 SIBLEY SE
4 SAYBROOK NE (SHEET 64)
5 GIBSON CITY WEST NE
6 SAYBROOK SE (SHEET 78)
7 GIBSON CITY WEST SW (SHEET 79)
8 GIBSON CITY WEST SE

INDEX TO ADJOINING 3.75 MAPS

GIBSON CITY WEST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 65 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MINIER SE QUADRANGLE
SHEET NUMBER 66 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MINIER NW
2 MINIER NE (SHEET 52)
3 STANFORD NW (SHEET 53)
4 MINIER SW
5 STANFORD SW (SHEET 67)
6 ARMINGTON NW
7 ARMINGTON NE (SHEET 80)
8 MCLEAN NW (SHEET 81)

INDEX TO ADJOINING 3.75 MAPS

MINIER SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 66 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
STANFORD SW QUADRANGLE
SHEET NUMBER 67 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

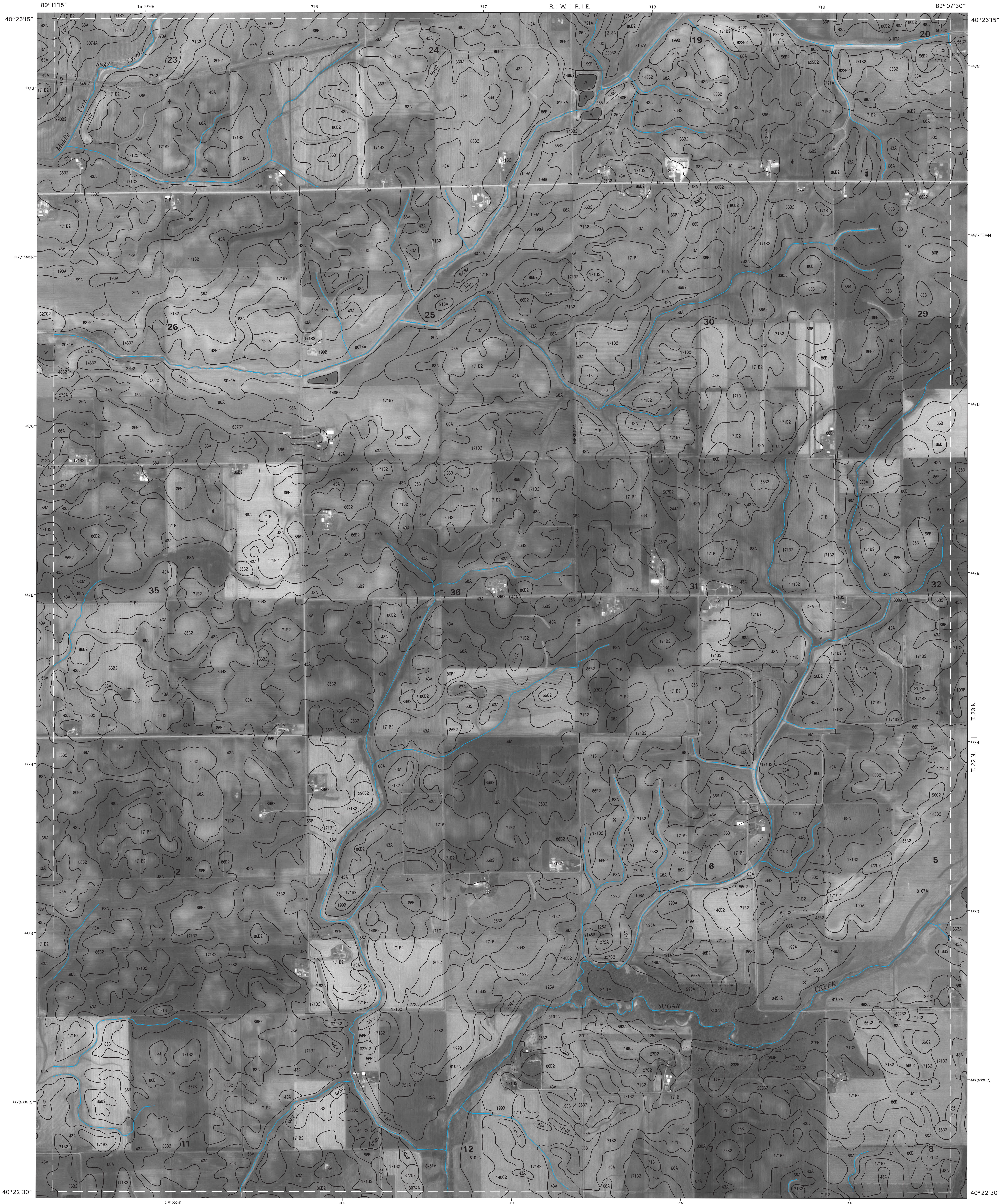
1 MINIER NE (SHEET 52)
2 STANFORD NW (SHEET 53)
3 STANFORD NE (SHEET 54)
4 MINIER SE (SHEET 66)
5 STANFORD SE (SHEET 68)
6 ARMINGTON NE (SHEET 80)
7 MCLEAN NW (SHEET 81)
8 MCLEAN NE (SHEET 82)

INDEX TO ADJOINING 3.75 MAPS

STANFORD SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 67 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
STANFORD SE QUADRANGLE
SHEET NUMBER 68 OF 107



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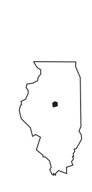
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

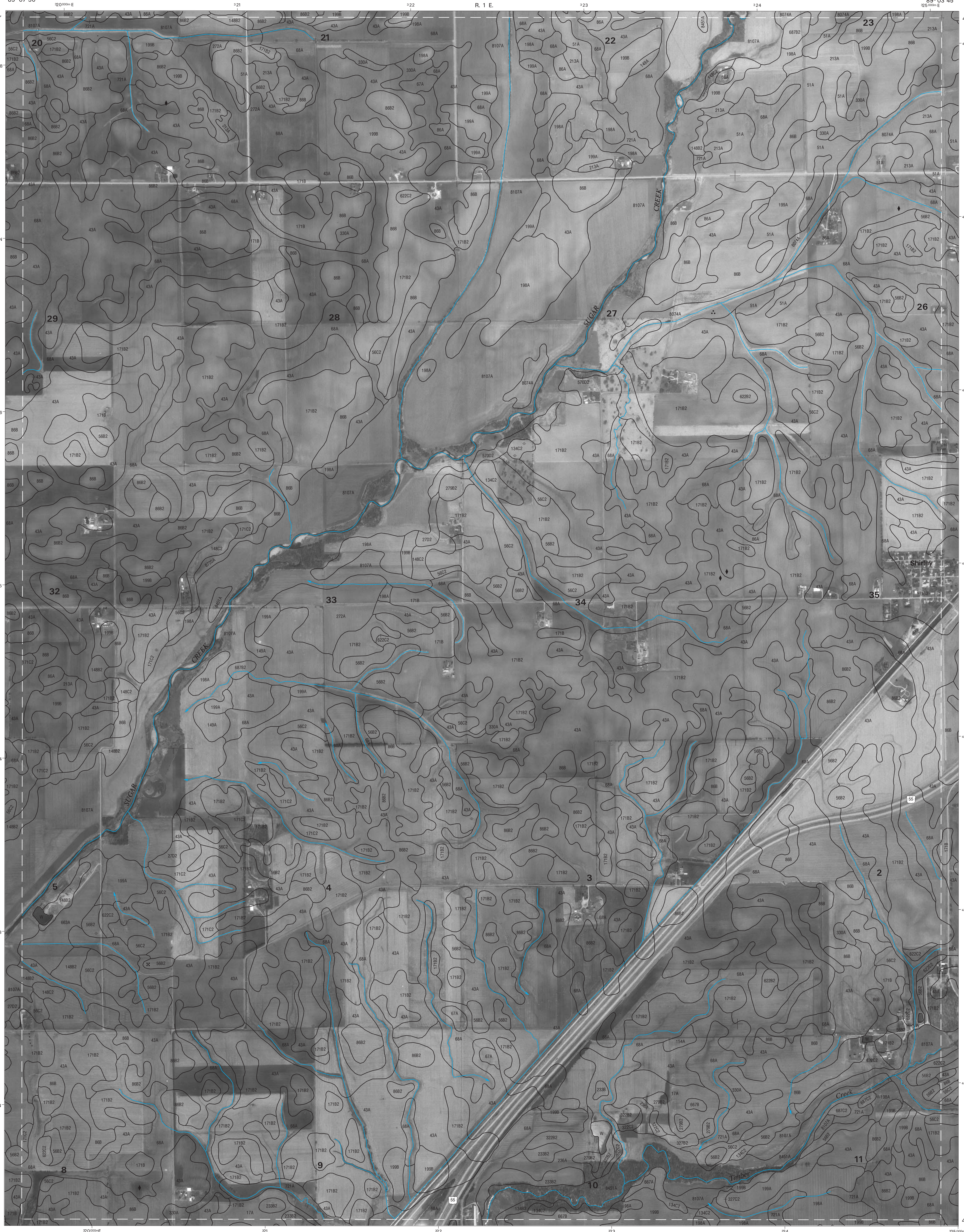
1 STANFORD NW (SHEET 53)
2 STANFORD NE (SHEET 54)
3 BLOOMINGTON WEST NW (SHEET 55)
4 STANFORD SW (SHEET 67)
5 BLOOMINGTON WEST SW (SHEET 69)
6 MCLEAN NW (SHEET 81)
7 MCLEAN NE (SHEET 82)
8 FUNKS GROVE NW (SHEET 83)

INDEX TO ADJOINING 3.75 MAPS

STANFORD SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 68 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON WEST SW QUADRANGLE
SHEET NUMBER 69 OF 107



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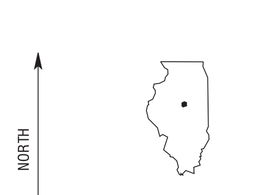

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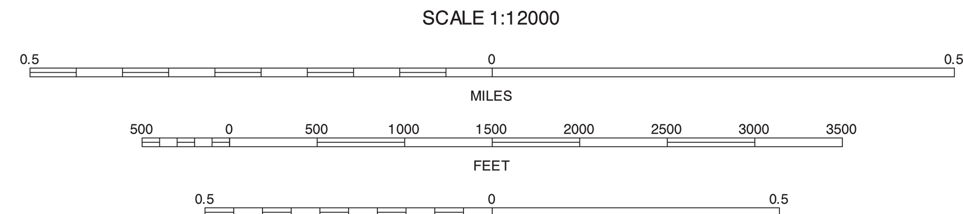

1	2	3
4		5
6	7	8

1 STANFORD NE (SHEET 54)
2 BLOOMINGTON WEST NW (SHEET 55)
3 BLOOMINGTON WEST NE (SHEET 56)
4 STANFORD SE (SHEET 68)
5 BLOOMINGTON WEST SE (SHEET 70)
6 MCLEAN NE (SHEET 82)
7 FUNKS GROVE NW (SHEET 83)
8 FUNKS GROVE NE (SHEET 84)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 69 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON WEST SE QUADRANGLE
SHEET NUMBER 70 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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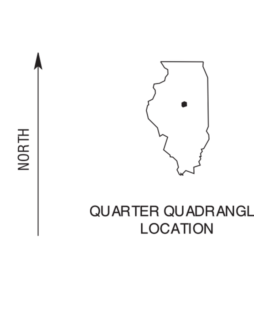
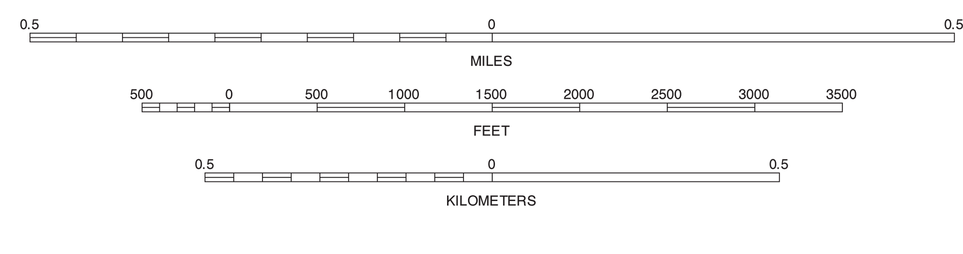


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

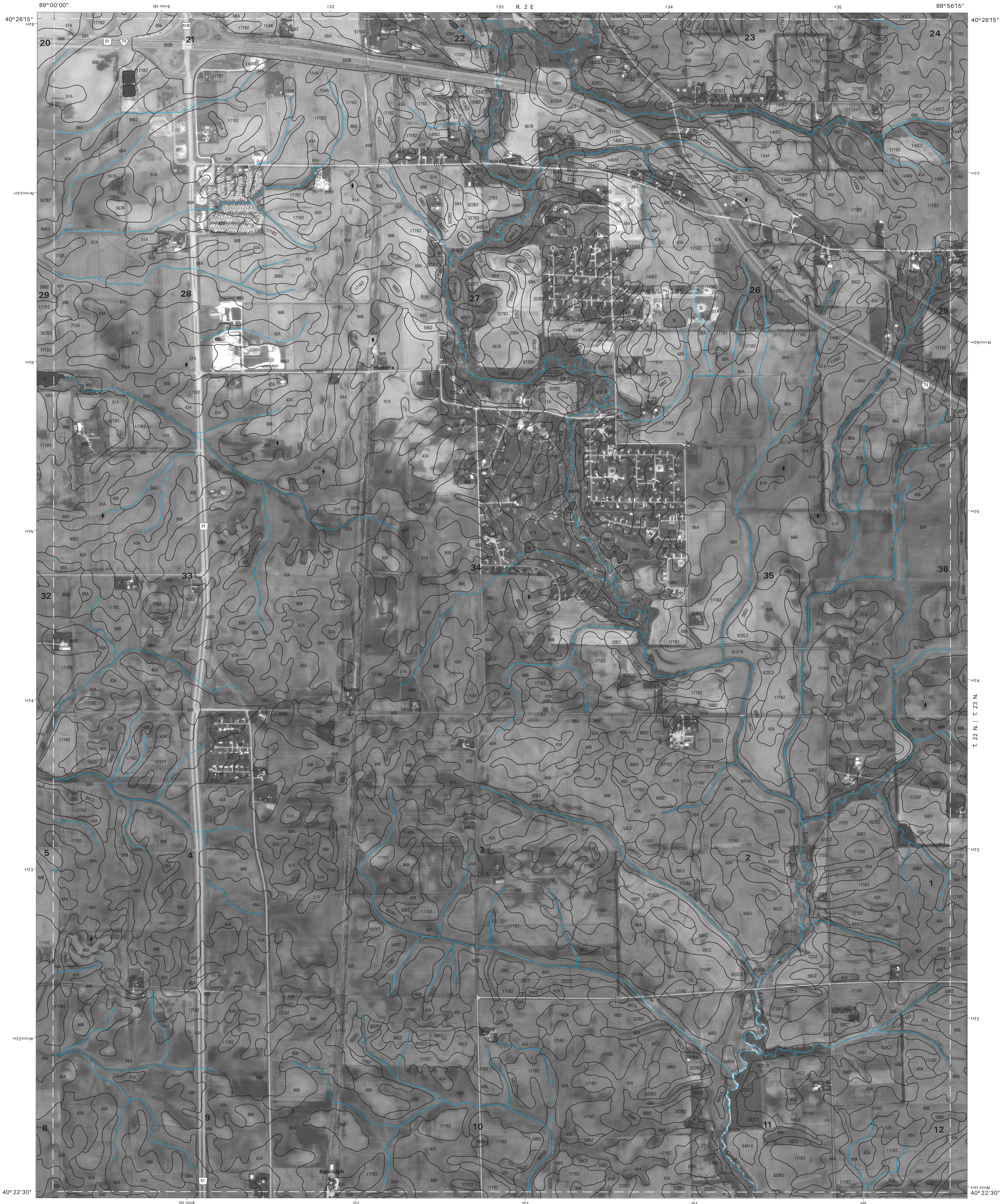
1 BLOOMINGTON WEST NW (SHEET 55)
2 BLOOMINGTON WEST NE (SHEET 56)
3 BLOOMINGTON EAST NW (SHEET 57)
4 BLOOMINGTON WEST SW (SHEET 69)
5 BLOOMINGTON EAST SW (SHEET 71)
6 FUNKS GROVE NW (SHEET 83)
7 FUNKS GROVE NE (SHEET 84)
8 HEYWORTH NW (SHEET 85)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 70 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON EAST SW QUADRANGLE
SHEET NUMBER 71 OF 107



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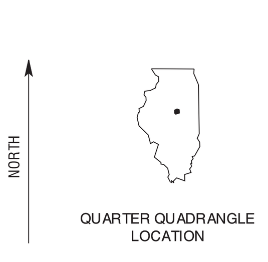


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

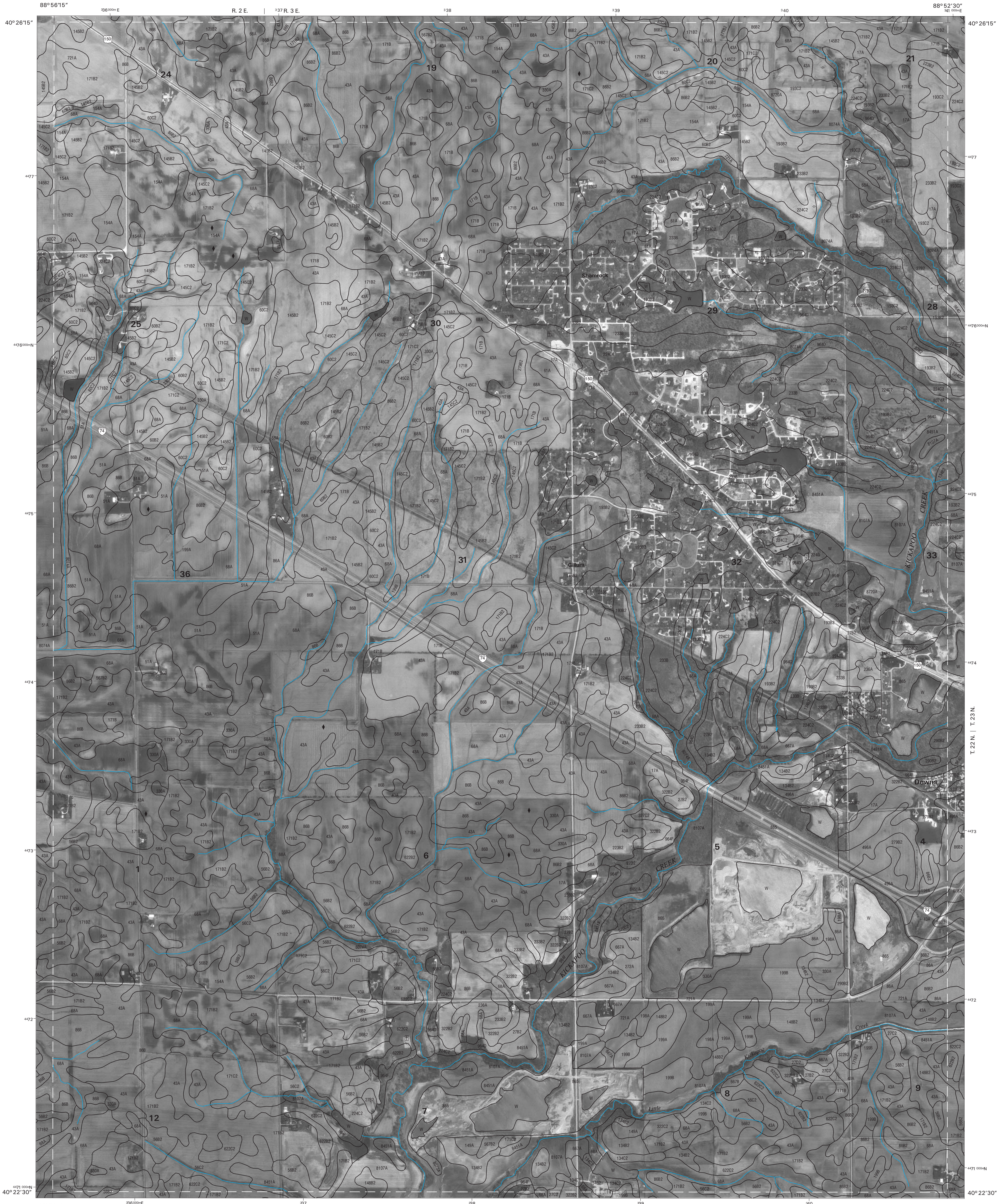
1 BLOOMINGTON WEST NE (SHEET 56)
2 BLOOMINGTON EAST NW (SHEET 57)
3 BLOOMINGTON EAST NE (SHEET 58)
4 BLOOMINGTON WEST SE (SHEET 70)
5 BLOOMINGTON EAST SE (SHEET 72)
6 FUNKS GROVE NE (SHEET 84)
7 HEYWORTH NW (SHEET 85)
8 HEYWORTH NE (SHEET 86)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON EAST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 71 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BLOOMINGTON EAST SE QUADRANGLE
SHEET NUMBER 72 OF 107



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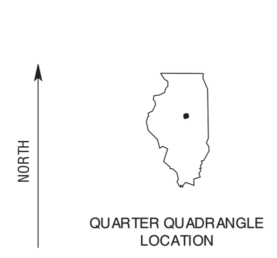

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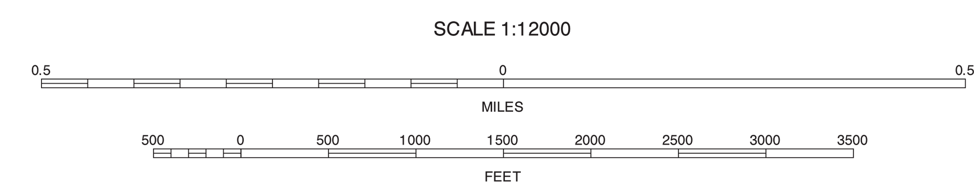


1	2	3	1 BLOOMINGTON EAST NW (SHEET 57)
4		5	2 BLOOMINGTON EAST NE (SHEET 58)
6	7	8	3 HOLDER NW (SHEET 59)

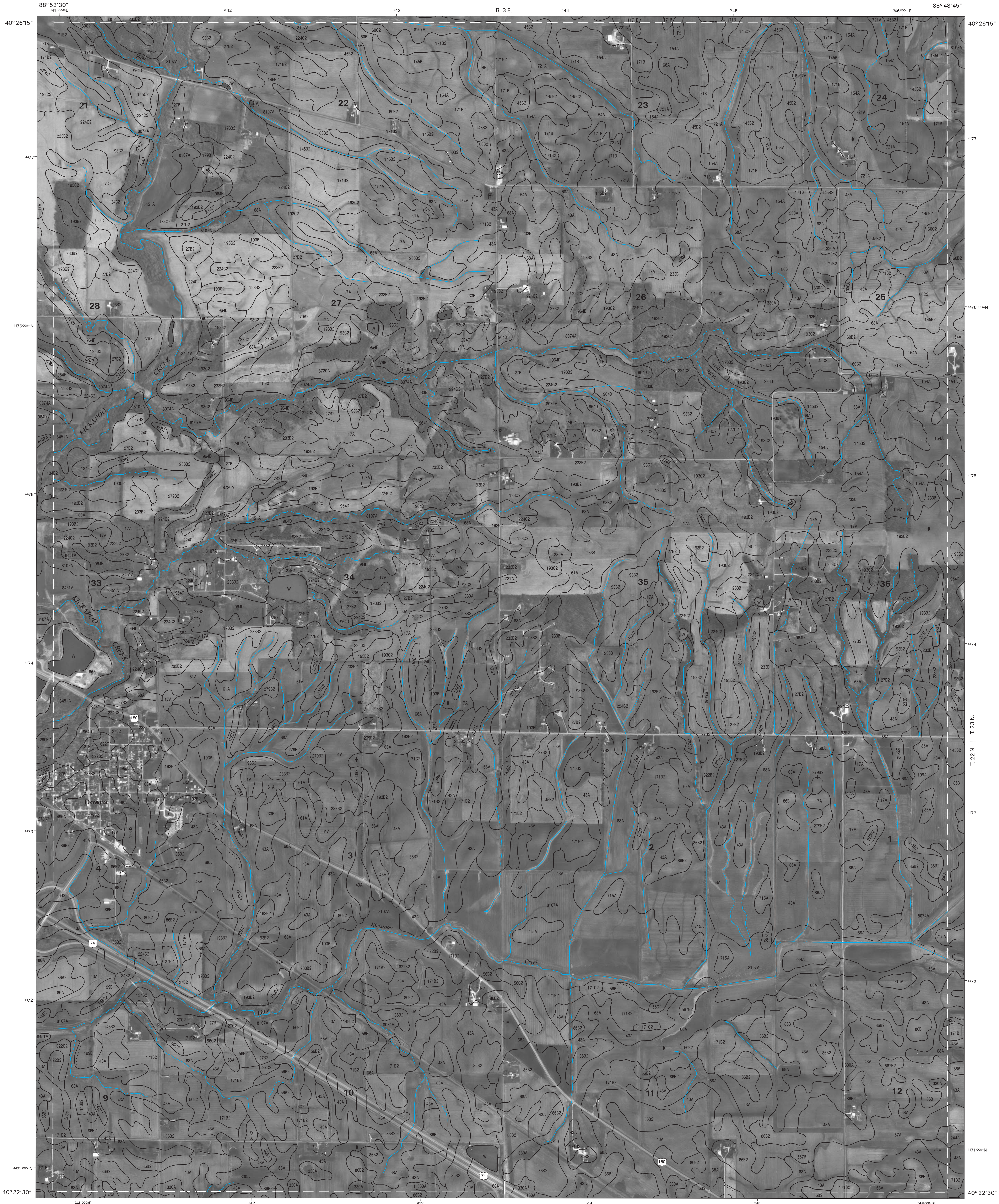
1 BLOOMINGTON EAST NW (SHEET 57)
2 BLOOMINGTON EAST NE (SHEET 58)
3 HOLDER NW (SHEET 59)
4 BLOOMINGTON EAST SW (SHEET 71)
5 HOLDER SW (SHEET 73)
6 HEYWORTH NW (SHEET 85)
7 HEYWORTH NE (SHEET 86)
8 LE ROY NW (SHEET 87)

INDEX TO ADJOINING 3.75 MAPS

BLOOMINGTON EAST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 72 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HOLDER SW QUADRANGLE
SHEET NUMBER 73 OF 107



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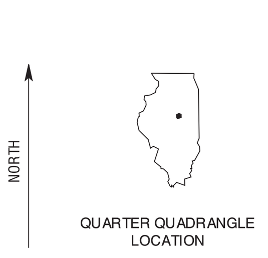

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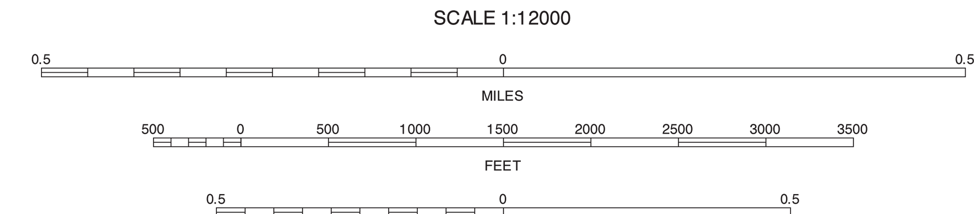


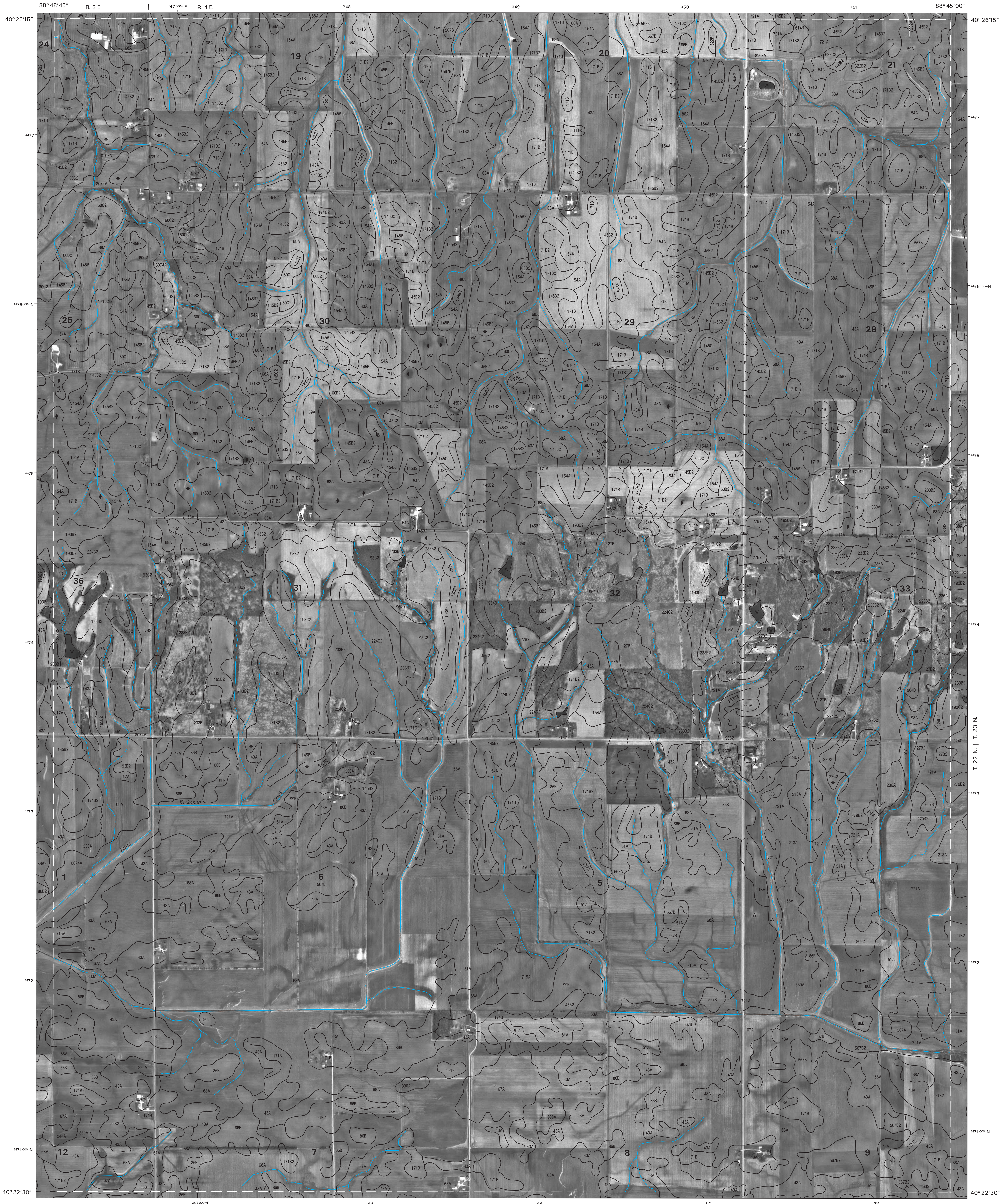
1	2	3
4		5
6	7	8

1 BLOOMINGTON EAST NE (SHEET 58)
2 HOLDER NW (SHEET 59)
3 HOLDER NE (SHEET 60)
4 BLOOMINGTON EAST SE (SHEET 72)
5 HOLDER SE (SHEET 74)
6 HEYWORTH NE (SHEET 86)
7 LE ROY NW (SHEET 87)
8 LE ROY NE (SHEET 88)

INDEX TO ADJOINING 3.75 MAPS

HOLDER SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 73 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 HOLDER NW (SHEET 59)
2 HOLDER NE (SHEET 60)
3 ARROWSMITH NW (SHEET 61)
4 HOLDER SW (SHEET 73)
5 ARROWSMITH SW (SHEET 75)
6 LE ROY NW (SHEET 87)
7 LE ROY NE (SHEET 88)
8 FARMER CITY NORTH NW (SHEET 89)

INDEX TO ADJOINING 3.75 MAPS

HOLDER SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 74 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
ARROWSMITH SW QUADRANGLE
SHEET NUMBER 75 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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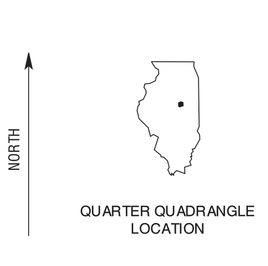

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 HOLDER NE (SHEET 60)
2 ARROWSMITH NW (SHEET 61)
3 ARROWSMITH NE (SHEET 62)
4 HOLDER SE (SHEET 74)
5 ARROWSMITH SE (SHEET 76)
6 LE ROY NE (SHEET 88)
7 FARMER CITY NORTH NW (SHEET 89)
8 FARMER CITY NORTH NE (SHEET 90)

INDEX TO ADJOINING 3.75 MAPS

ARROWSMITH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 75 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
ARROWSMITH SE QUADRANGLE
SHEET NUMBER 76 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

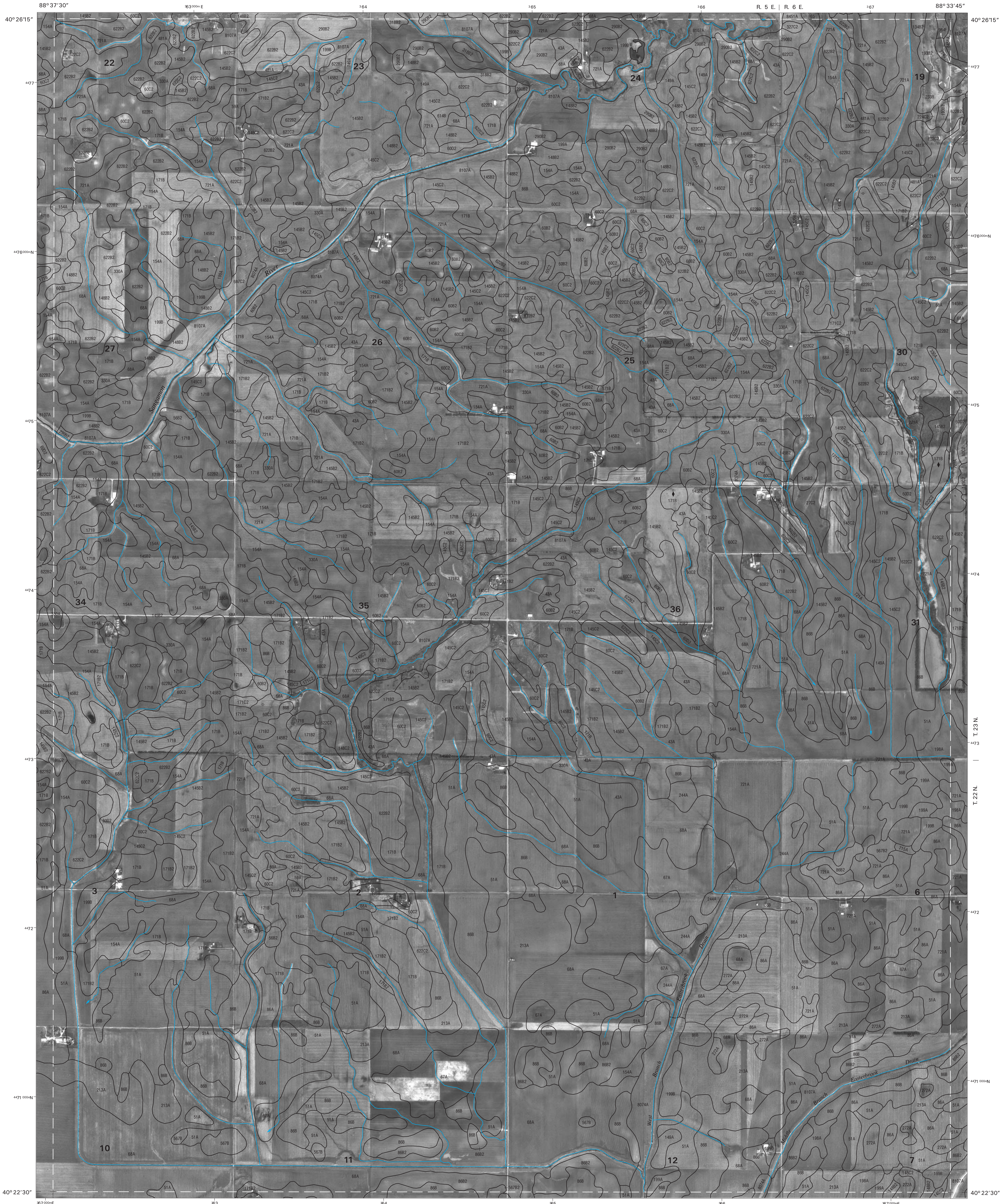
0.5 0 0.5
KILOMETERS

1 ARROWSMITH NW (SHEET 61)
2 ARROWSMITH NE (SHEET 62)
3 SAYBROOK NW (SHEET 63)
4 ARROWSMITH SW (SHEET 75)
5 SAYBROOK SW (SHEET 77)
6 FARMER CITY NORTH NW (SHEET 89)
7 FARMER CITY NORTH NE (SHEET 90)
8 BELLFLOWER NW (SHEET 91)

INDEX TO ADJOINING 3.75 MAPS

ARROWSMITH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 76 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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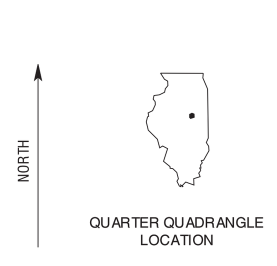
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



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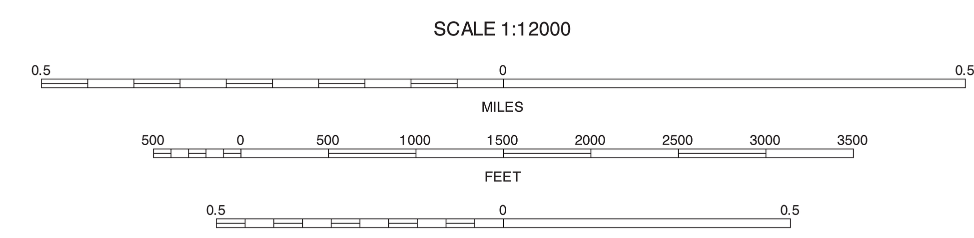


1	2	3
4		5
6	7	8

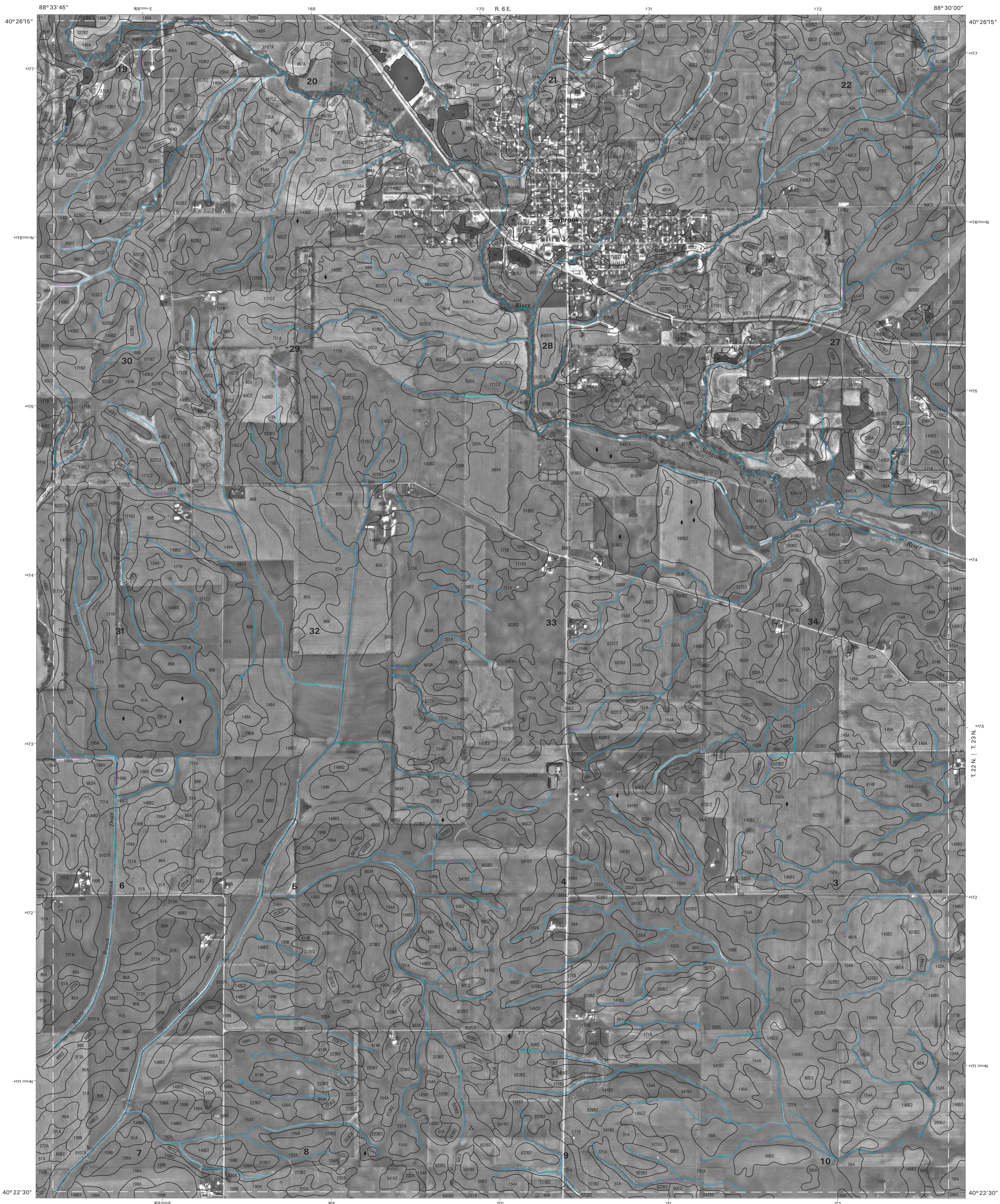
1 ARROWSMITH NE (SHEET 62)
2 SAYBROOK NW (SHEET 63)
3 SAYBROOK NE (SHEET 64)
4 ARROWSMITH SE (SHEET 76)
5 SAYBROOK SE (SHEET 78)
6 FARMER CITY NORTH NE (SHEET 90)
7 BELLFLOWER NW (SHEET 91)
8 BELLFLOWER NE (SHEET 92)

INDEX TO ADJOINING 3.75 MAPS

SAYBROOK SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 77 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
SAYBROOK SE QUADRANGLE
SHEET NUMBER 78 OF 107



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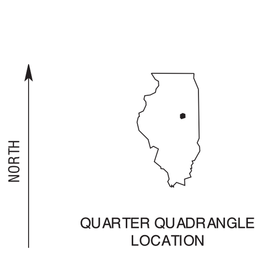

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SAYBROOK NW (SHEET 63)
2 SAYBROOK NE (SHEET 64)
3 GIBSON CITY WEST NW (SHEET 65)
4 SAYBROOK SW (SHEET 77)
5 GIBSON CITY WEST SW (SHEET 79)
6 BELLFLOWER NW (SHEET 91)
7 BELLFLOWER NE (SHEET 92)
8 FOOSLAND NW (SHEET 93)

INDEX TO ADJOINING 3.75 MAPS

SAYBROOK SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 78 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
GIBSON CITY WEST SW QUADRANGLE
SHEET NUMBER 79 OF 107

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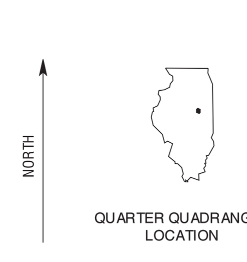
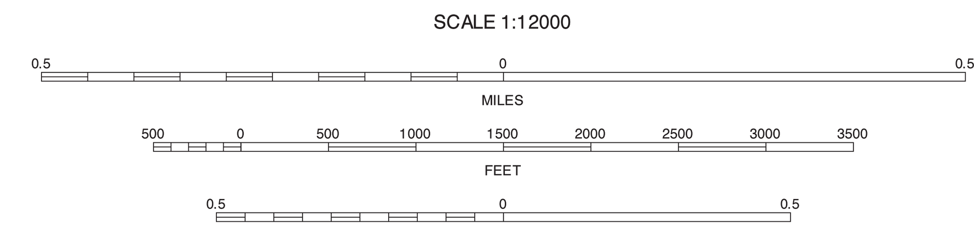
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 SAYBROOK NE (SHEET 64)
2 GIBSON CITY WEST NW (SHEET 65)
3 GIBSON CITY WEST NE
4 SAYBROOK SE (SHEET 78)
5 GIBSON CITY WEST SE
6 BELLFLOWER NE (SHEET 92)
7 FOOSLAND NW (SHEET 93)
8 FOOSLAND NE

INDEX TO ADJOINING 3.75 MAPS

GIBSON CITY WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 79 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
ARMINGTON NE QUADRANGLE
SHEET NUMBER 80 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

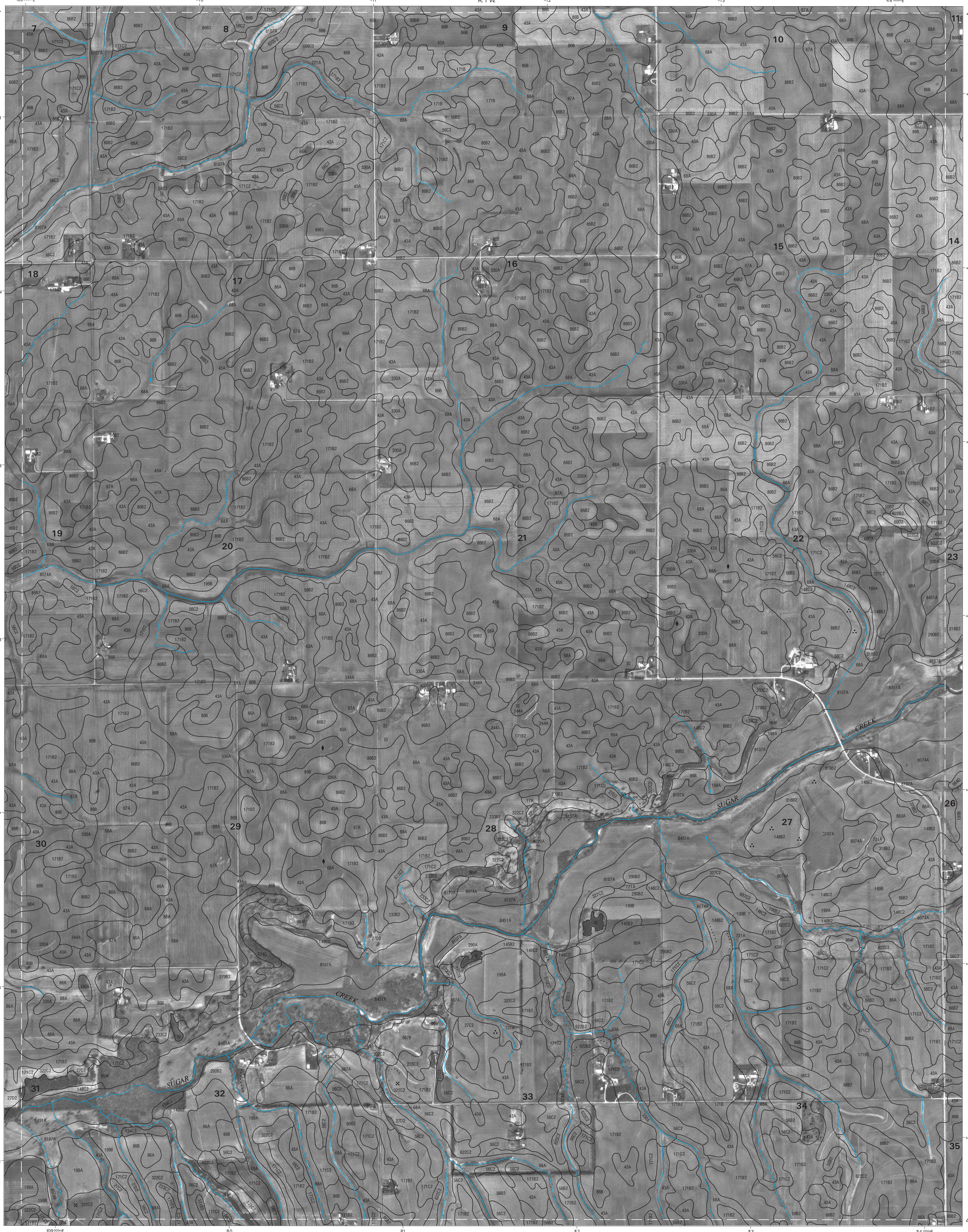
1 MINIER SW
2 MINIER SE (SHEET 66)
3 STANFORD SW (SHEET 67)
4 ARMINGTON NW
5 MCLEAN NW (SHEET 81)
6 ARMINGTON SW
7 ARMINGTON SE (SHEET 94)
8 MCLEAN SW (SHEET 95)

INDEX TO ADJOINING 3.75 MAPS

ARMINGTON NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 80 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MCLEAN NW QUADRANGLE
SHEET NUMBER 81 OF 107



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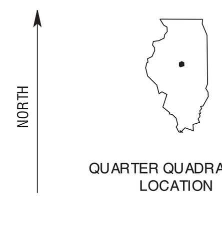
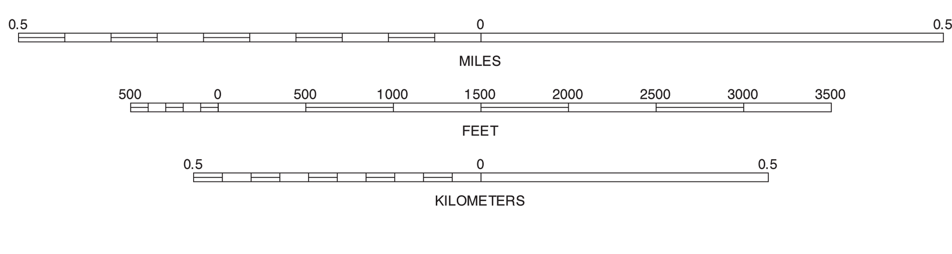


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



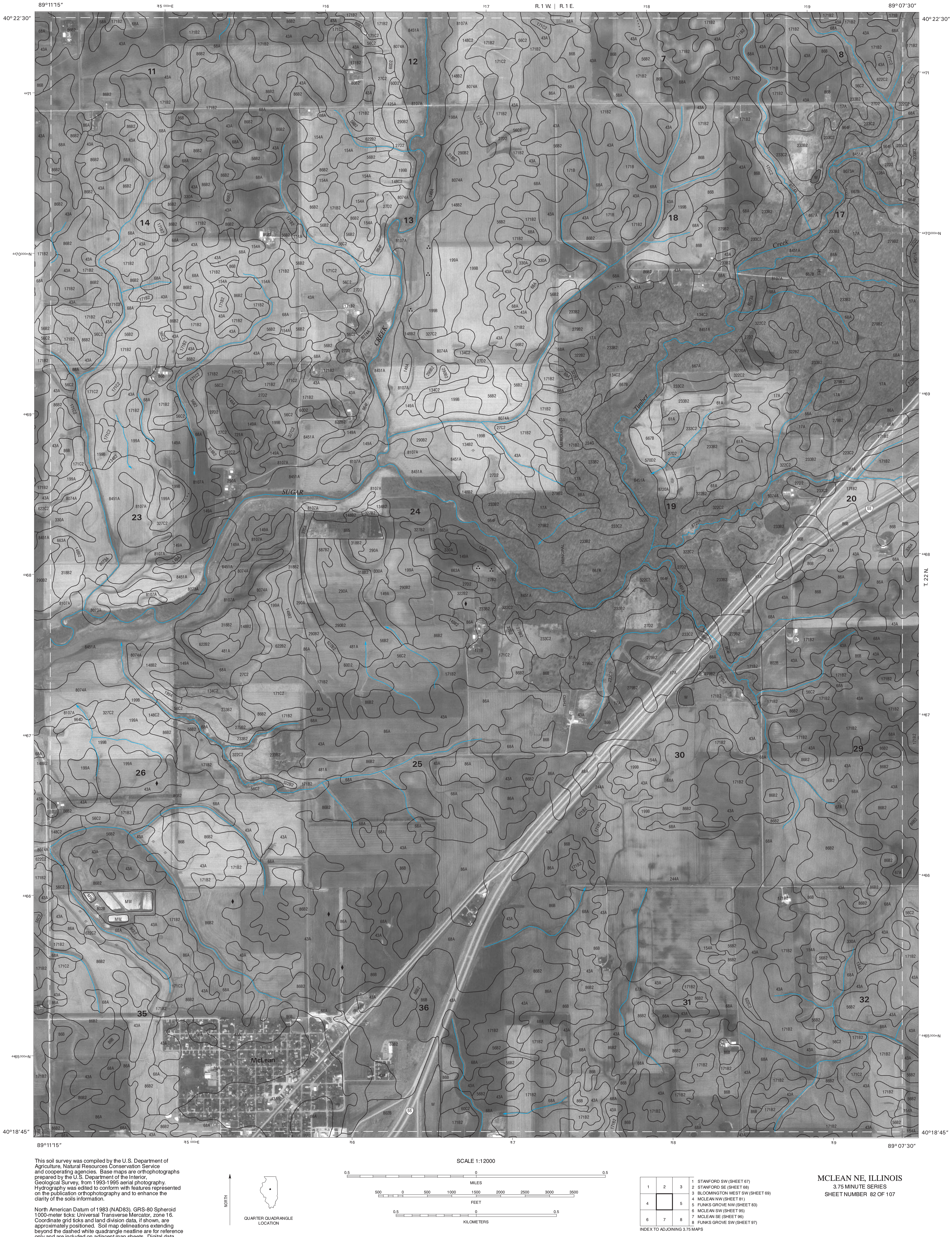
1	2	3
4		5
6	7	8

1 MINIER SE (SHEET 66)
2 STANFORD SW (SHEET 67)
3 STANFORD SE (SHEET 68)
4 ARMINGTON NE (SHEET 80)
5 MCLEAN NE (SHEET 82)
6 ARMINGTON SE (SHEET 94)
7 MCLEAN SW (SHEET 95)
8 MCLEAN SE (SHEET 96)

INDEX TO ADJOINING 3.75 MAPS

MCLEAN NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 81 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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1 STANFORD SW (SHEET 67)
2 STANFORD SE (SHEET 68)
3 BLOOMINGTON WEST SW (SHEET 69)
4 MCLEAN NW (SHEET 81)
5 FUNKS GROVE NW (SHEET 83)
6 MCLEAN SW (SHEET 95)
7 MCLEAN SE (SHEET 96)
8 FUNKS GROVE SW (SHEET 97)

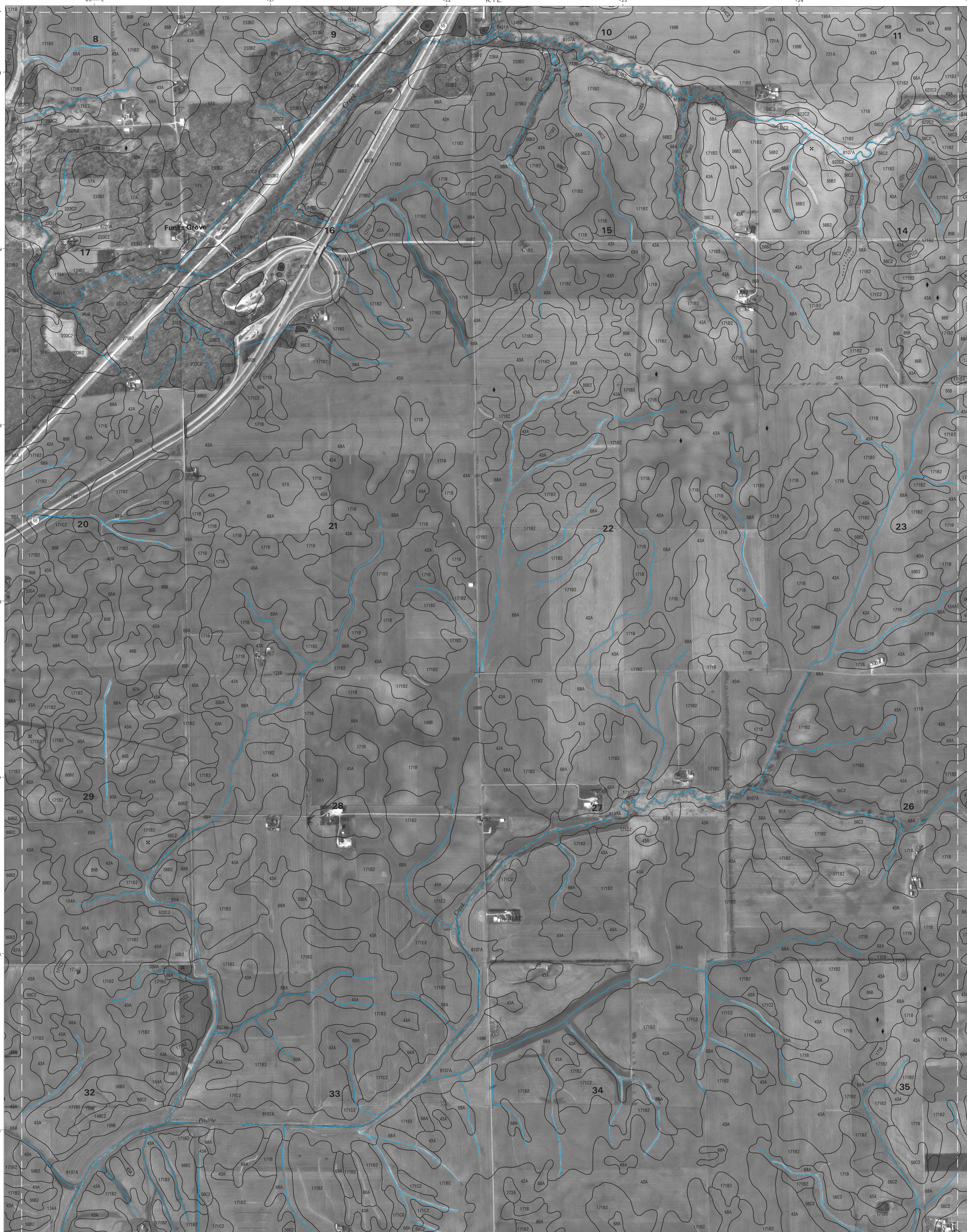
INDEX TO ADJOINING 3.75 MAPS

MCLEAN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 82 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FUNKS GROVE NW QUADRANGLE
SHEET NUMBER 83 OF 107

89° 07′ 30″ — 89° 03′ 45″
40° 22′ 30″ — 40° 18′ 45″



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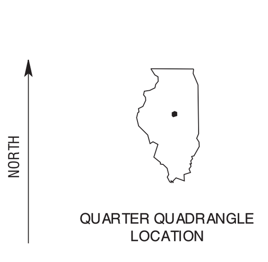


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

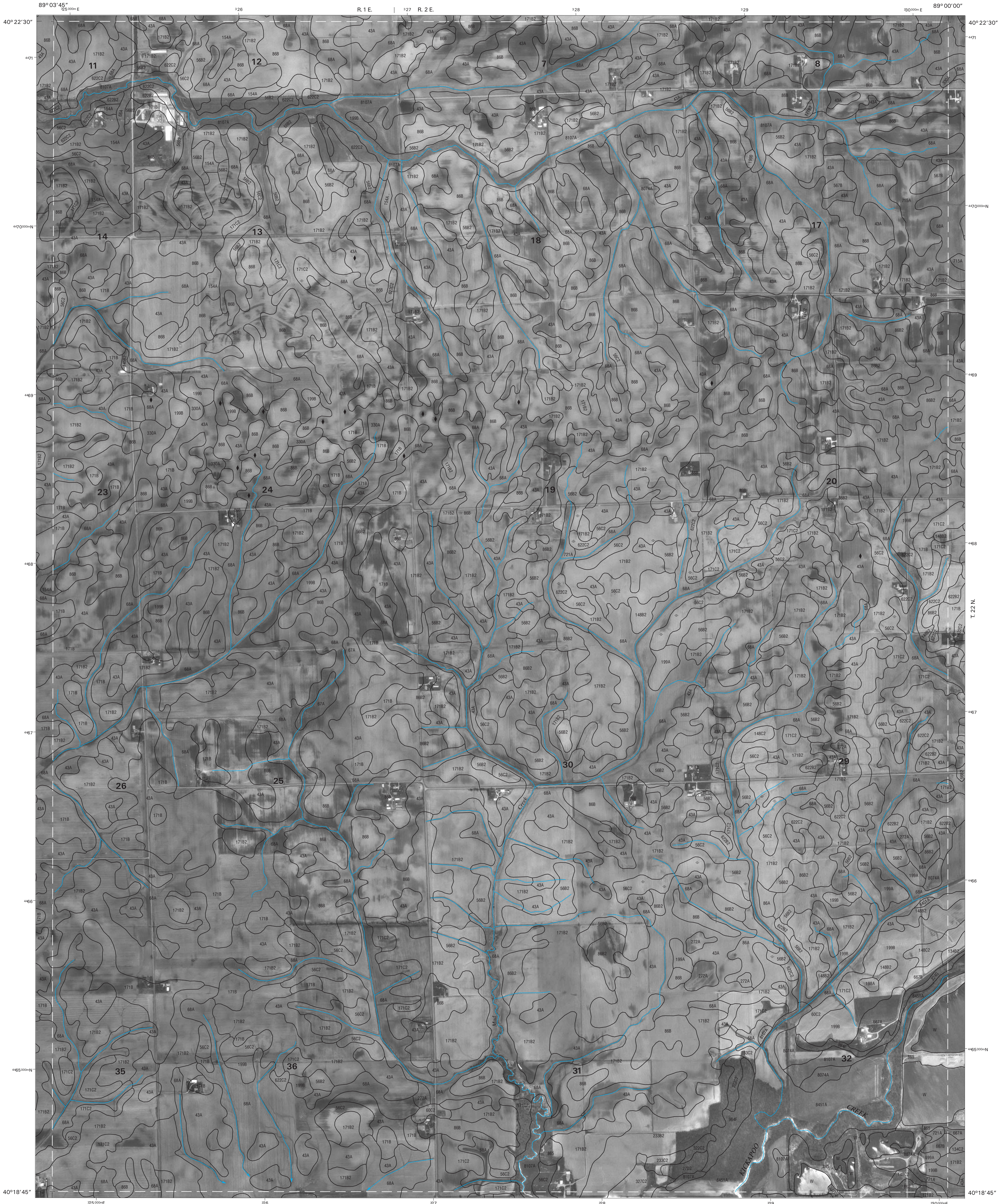
1 STANFORD SE (SHEET 68)
2 BLOOMINGTON WEST SW (SHEET 69)
3 BLOOMINGTON WEST SE (SHEET 70)
4 MCLEAN NE (SHEET 82)
5 FUNKS GROVE NE (SHEET 84)
6 MCLEAN SE (SHEET 96)
7 FUNKS GROVE SW (SHEET 97)
8 FUNKS GROVE SE (SHEET 98)

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 83 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FUNKS GROVE NE QUADRANGLE
SHEET NUMBER 84 OF 107



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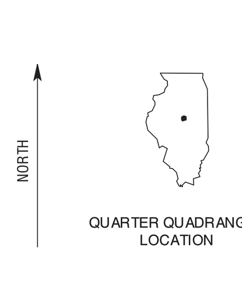
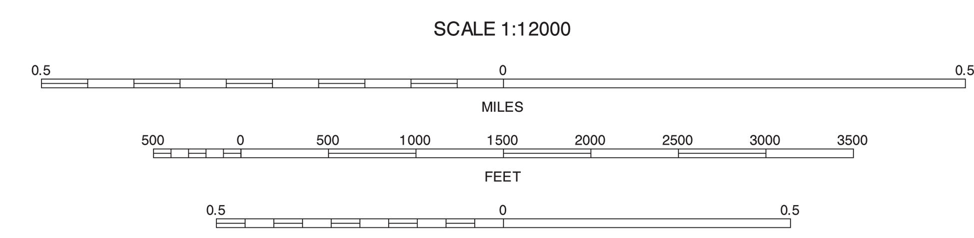
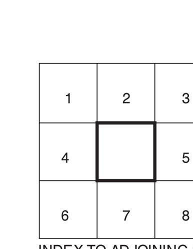


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

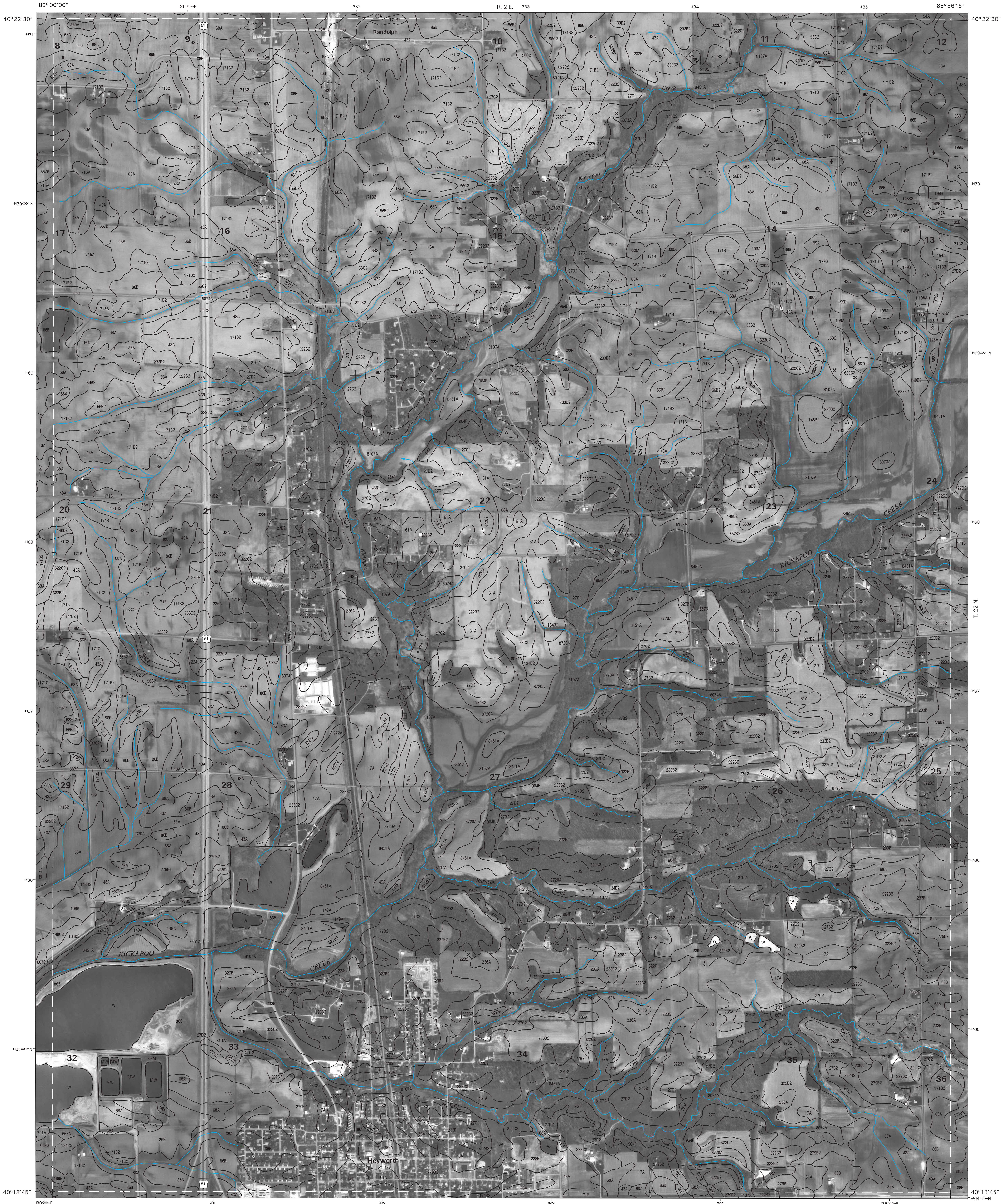




1 BLOOMINGTON WEST SW (SHEET 69)
2 BLOOMINGTON WEST SE (SHEET 70)
3 BLOOMINGTON EAST SW (SHEET 71)
4 FUNKS GROVE NW (SHEET 83)
5 HEYWORTH NW (SHEET 85)
6 FUNKS GROVE SW (SHEET 97)
7 FUNKS GROVE SE (SHEET 98)
8 HEYWORTH SW (SHEET 99)

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 84 OF 107



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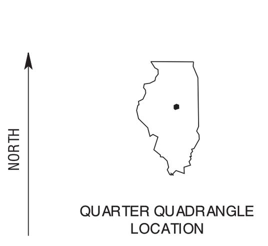
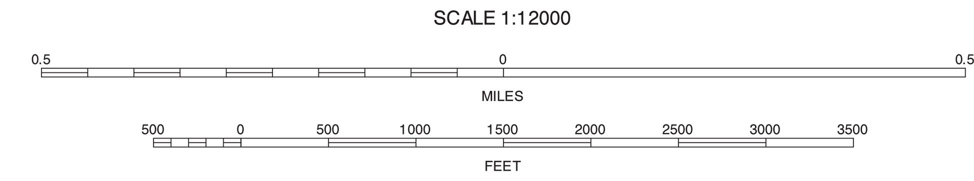


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 BLOOMINGTON WEST SE (SHEET 70)
2 BLOOMINGTON EAST SW (SHEET 71)
3 BLOOMINGTON EAST SE (SHEET 72)
4 FUNKS GROVE NE (SHEET 84)
5 HEYWORTH NE (SHEET 86)
6 FUNKS GROVE SE (SHEET 98)
7 HEYWORTH SW (SHEET 99)
8 HEYWORTH SE (SHEET 100)

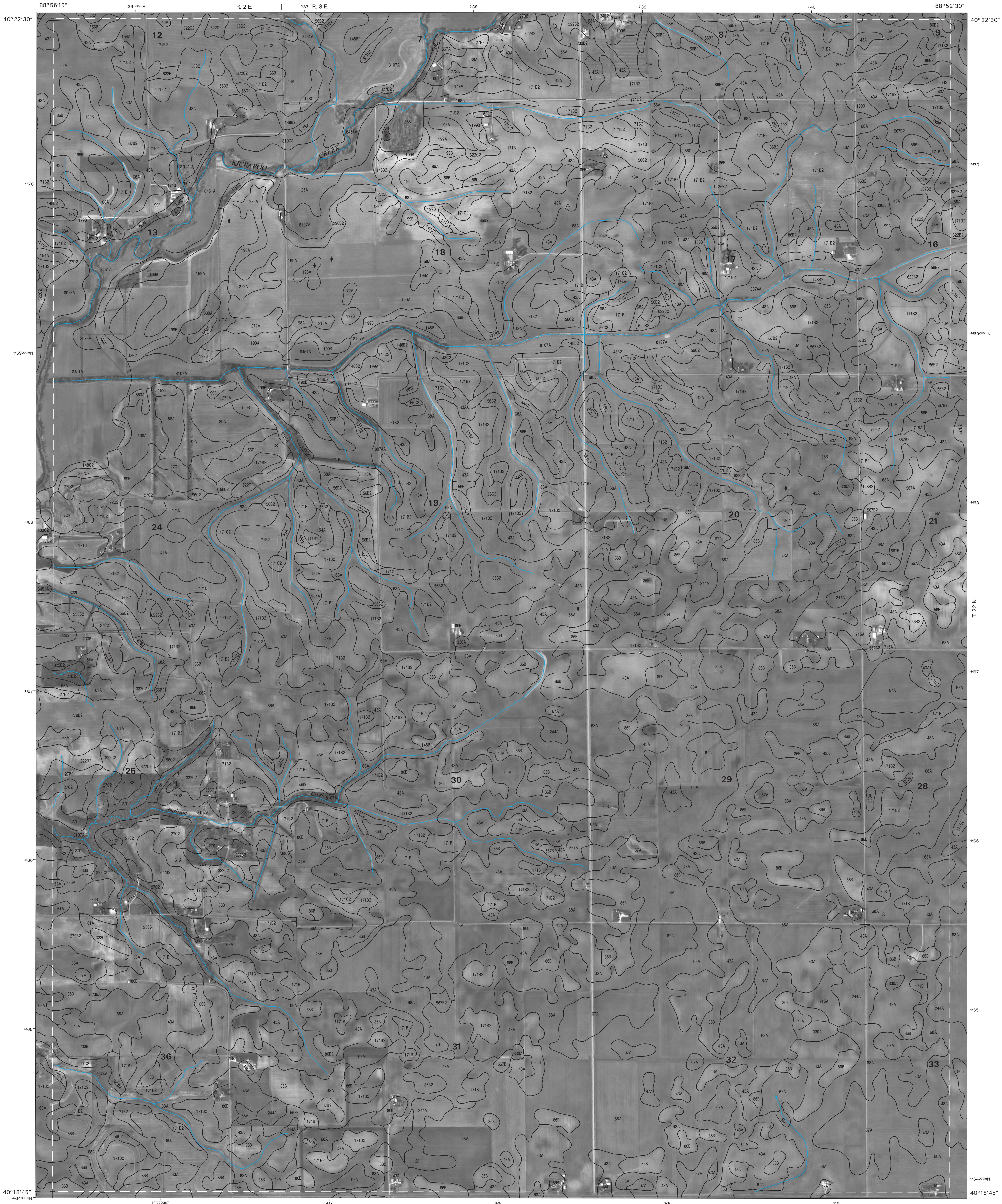
INDEX TO ADJOINING 3.75 MAPS

HEYWORTH NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 85 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HEYWORTH NE QUADRANGLE
SHEET NUMBER 86 OF 107



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

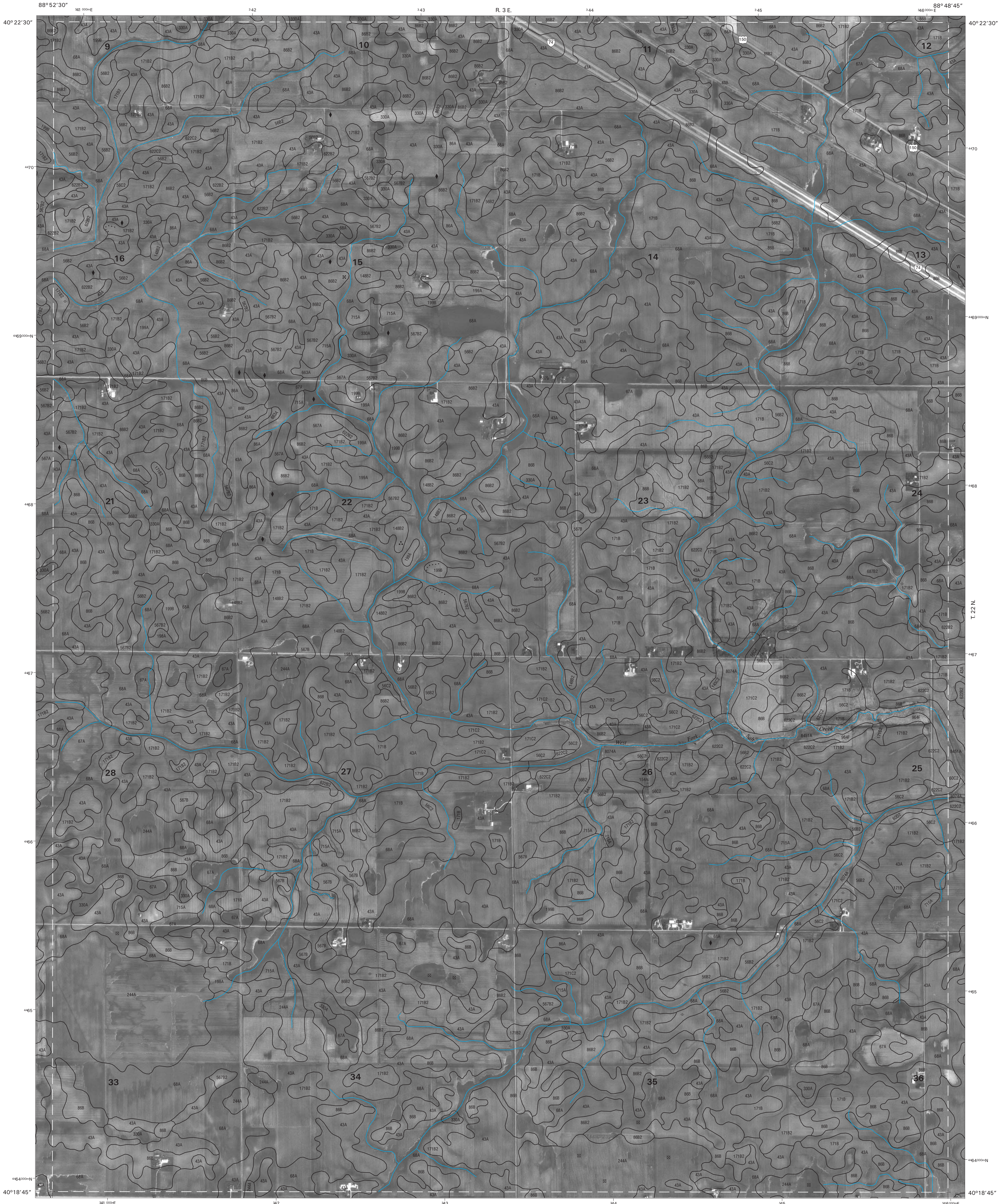
1 BLOOMINGTON EAST SW (SHEET 71)
2 BLOOMINGTON EAST SE (SHEET 72)
3 HOLDER SW (SHEET 73)
4 HEYWORTH NW (SHEET 85)
5 LE ROY NW (SHEET 87)
6 HEYWORTH SW (SHEET 99)
7 HEYWORTH SE (SHEET 100)
8 LE ROY SW (SHEET 101)

INDEX TO ADJOINING 3.75 MAPS

HEYWORTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 86 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LE ROY NW QUADRANGLE
SHEET NUMBER 87 OF 107



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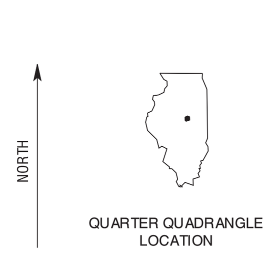
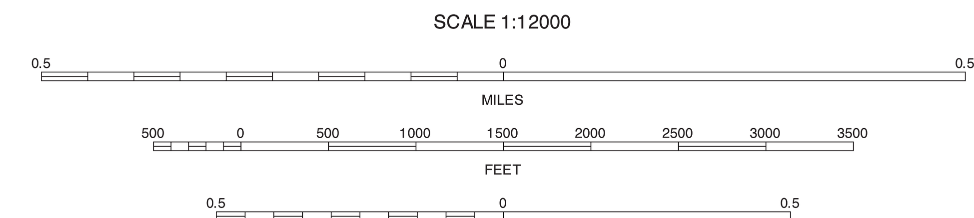


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 BLOOMINGTON EAST SE (SHEET 72)
2 HOLDER SW (SHEET 73)
3 HOLDER SE (SHEET 74)
4 HEYWORTH NE (SHEET 86)
5 LE ROY NE (SHEET 88)
6 HEYWORTH SE (SHEET 100)
7 LE ROY SW (SHEET 101)
8 LE ROY SE (SHEET 102)

INDEX TO ADJOINING 3.75 MAPS

LE ROY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 87 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LE ROY NE QUADRANGLE
SHEET NUMBER 88 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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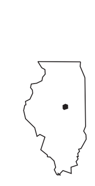
NORTH



QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

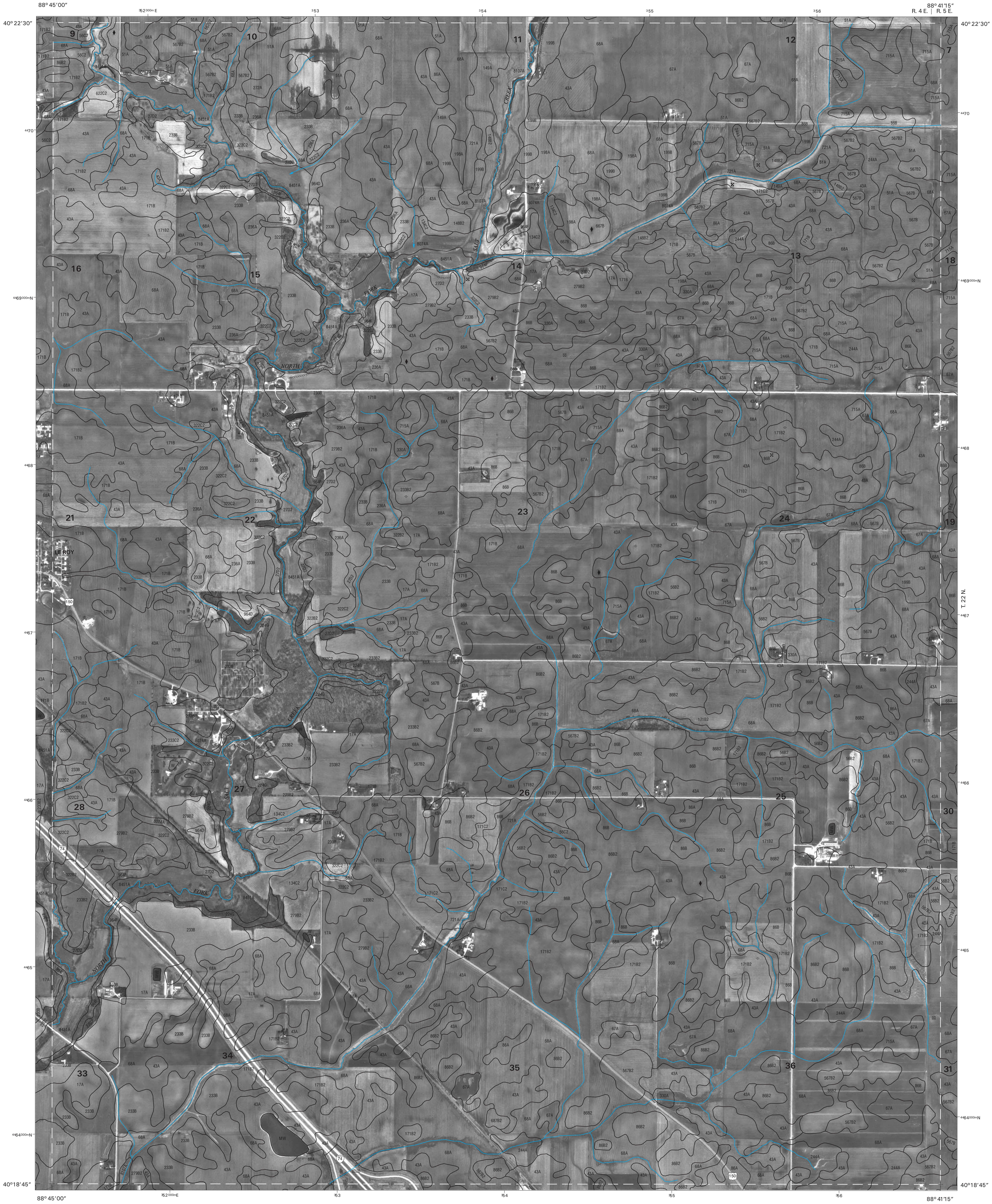
1 HOLDER SW (SHEET 73)
2 HOLDER SE (SHEET 74)
3 ARROWSMITH SW (SHEET 75)
4 LE ROY NW (SHEET 87)
5 FARMER CITY NORTH NW (SHEET 89)
6 LE ROY SW (SHEET 101)
7 LE ROY SE (SHEET 102)
8 FARMER CITY NORTH SW (SHEET 103)

INDEX TO ADJOINING 3.75 MAPS

LE ROY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 88 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FARMER CITY NORTH NW QUADRANGLE
SHEET NUMBER 89 OF 107



SCALE 1:12000

MILES

FEET

KILOMETERS

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NORTH

QUARTER QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

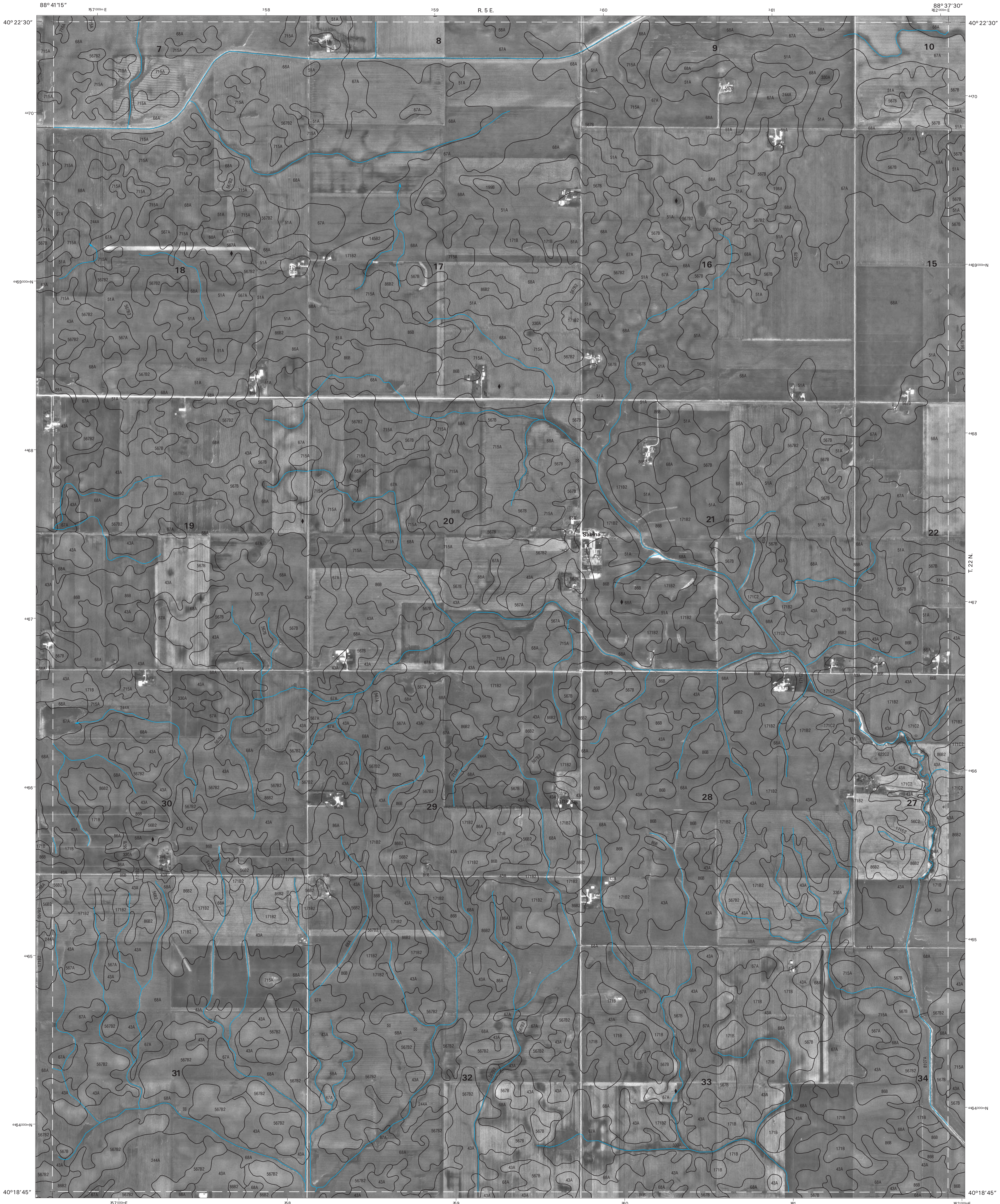
1 HOLDER SE (SHEET 74)
2 ARROWSMITH SW (SHEET 75)
3 ARROWSMITH SE (SHEET 76)
4 LE ROY NE (SHEET 88)
5 FARMER CITY NORTH NE (SHEET 90)
6 LE ROY SE (SHEET 102)
7 FARMER CITY NORTH SW (SHEET 103)
8 FARMER CITY NORTH SE (SHEET 104)

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY NORTH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 89 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FARMER CITY NORTH NE QUADRANGLE
SHEET NUMBER 90 OF 107



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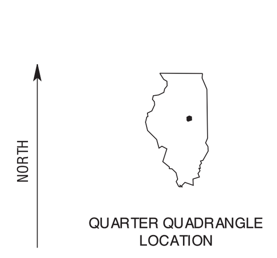
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 ARROWSMITH SW (SHEET 75)
2 ARROWSMITH SE (SHEET 76)
3 SAYBROOK SW (SHEET 77)
4 FARMER CITY NORTH NW (SHEET 89)
5 BELLFLOWER NW (SHEET 91)
6 FARMER CITY NORTH SW (SHEET 103)
7 FARMER CITY NORTH SE (SHEET 104)
8 BELLFLOWER SW (SHEET 105)

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY NORTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 90 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BELLFLOWER NW QUADRANGLE
SHEET NUMBER 91 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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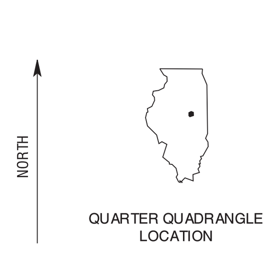

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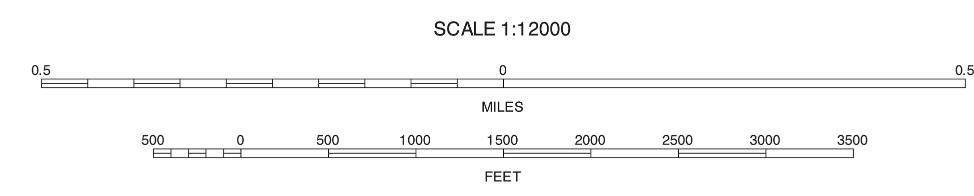


1	2	3
4		5
6	7	8

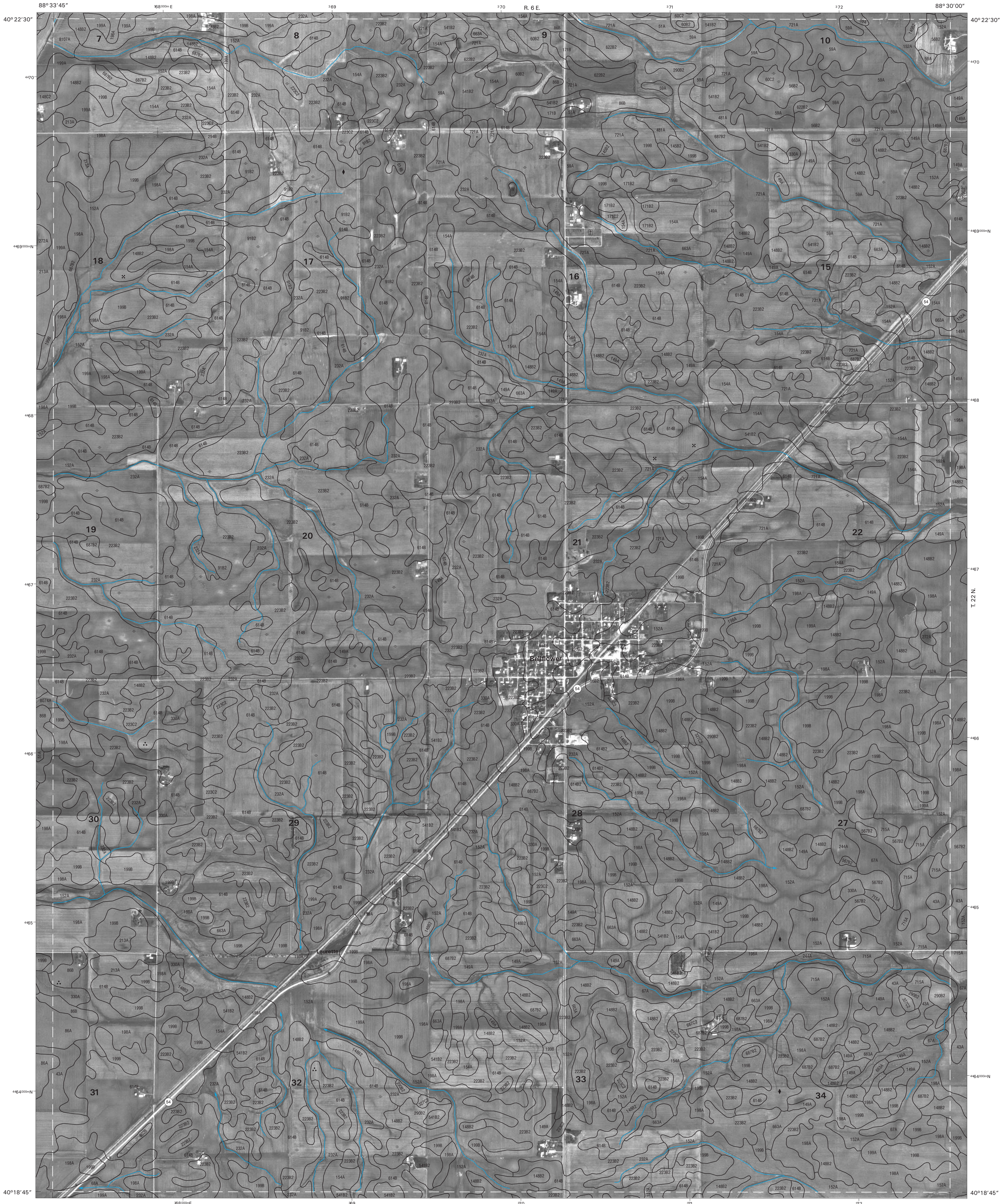
1 ARROWSMITH SE (SHEET 76)
2 SAYBROOK SW (SHEET 77)
3 SAYBROOK SE (SHEET 78)
4 FARMER CITY NORTH NE (SHEET 90)
5 BELLFLOWER NE (SHEET 92)
6 FARMER CITY NORTH SE (SHEET 104)
7 BELLFLOWER SW (SHEET 105)
8 BELLFLOWER SE (SHEET 106)

INDEX TO ADJOINING 3.75 MAPS

BELLFLOWER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 91 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BELLFLOWER NE QUADRANGLE
SHEET NUMBER 92 OF 107



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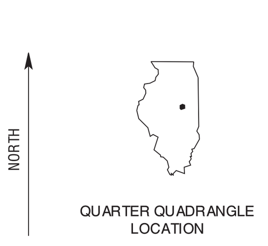

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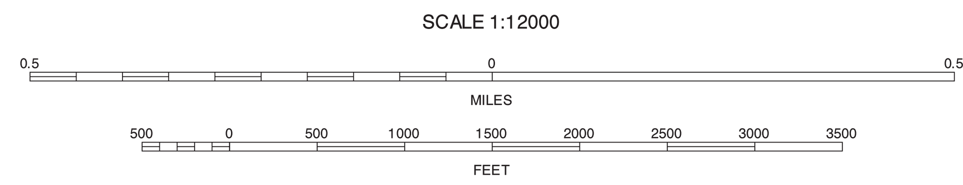

1	2	3
4		5
6	7	8

1 SAYBROOK SW (SHEET 77)
2 SAYBROOK SE (SHEET 78)
3 GIBSON CITY WEST SW (SHEET 79)
4 BELLFLOWER NW (SHEET 91)
5 FOOSLAND NW (SHEET 93)
6 BELLFLOWER SW (SHEET 105)
7 BELLFLOWER SE (SHEET 106)
8 FOOSLAND SW (SHEET 107)

INDEX TO ADJOINING 3.75 MAPS

BELLFLOWER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 92 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FOOSLAND NW QUADRANGLE
SHEET NUMBER 93 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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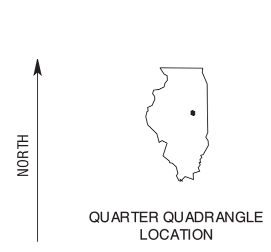


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

1	2	3
4		5
6	7	8

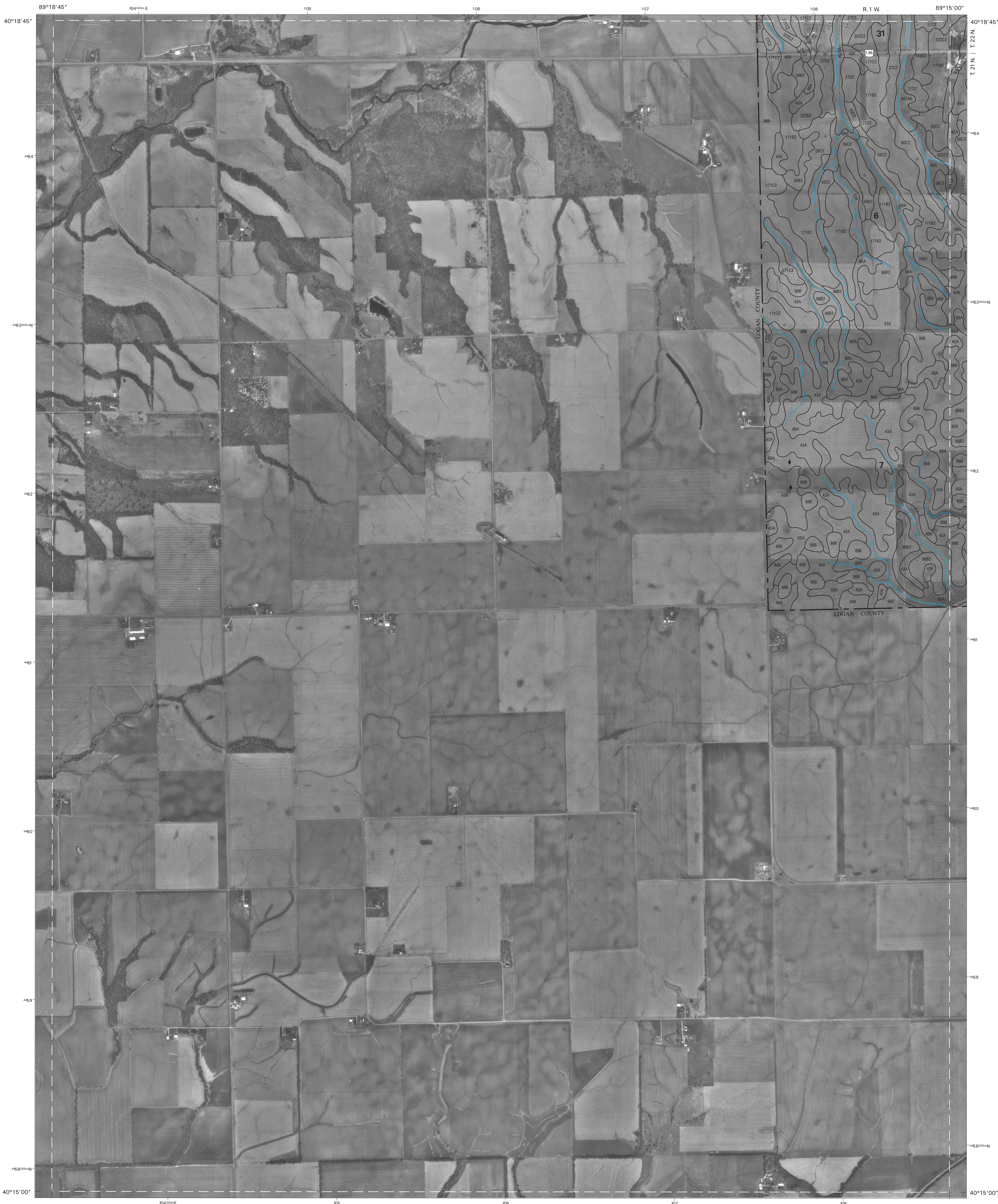
1 SAYBROOK SE (SHEET 78)
2 GIBSON CITY WEST SW (SHEET 79)
3 GIBSON CITY WEST SE
4 BELLFLOWER NE (SHEET 92)
5 FOOSLAND NE
6 BELLFLOWER SE (SHEET 106)
7 FOOSLAND SW (SHEET 107)
8 FOOSLAND SE

INDEX TO ADJOINING 3.75 MAPS

FOOSLAND NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 93 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
ARMINGTON SE QUADRANGLE
SHEET NUMBER 94 OF 107



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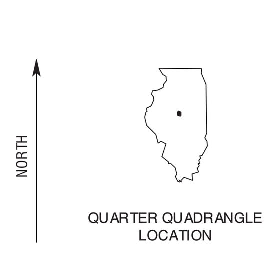

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1. ARMINGTON NW
2. ARMINGTON NE (SHEET 80)
3. MCLEAN NW (SHEET 81)
4. ARMINGTON SW
5. MCLEAN SW (SHEET 95)
6. LINCOLN EAST NW
7. LINCOLN EAST NE
8. WAYNESVILLE WEST_NW

INDEX TO ADJOINING 3.75 MAPS

ARMINGTON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 94 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
MCLEAN SW QUADRANGLE
SHEET NUMBER 95 OF 107

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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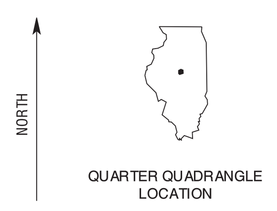

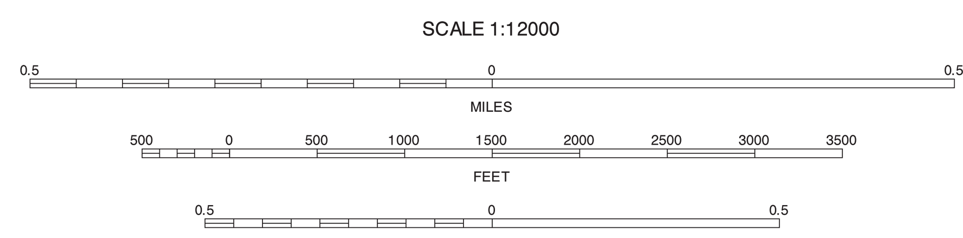

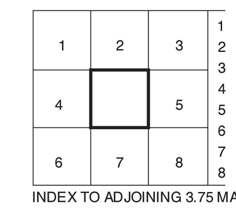

1 ARMINGTON NE (SHEET 80)
2 MCLEAN NW (SHEET 81)
3 MCLEAN NE (SHEET 82)
4 ARMINGTON SE (SHEET 94)
5 MCLEAN SE (SHEET 96)
6 LINCOLN EAST NE
7 WAYNESVILLE WEST NW
8 WAYNESVILLE WEST NE

INDEX TO ADJOINING 3.75 MAPS

MCLEAN SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 95 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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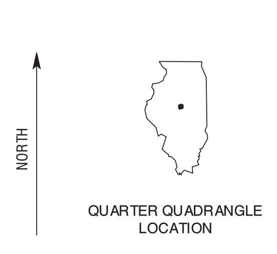
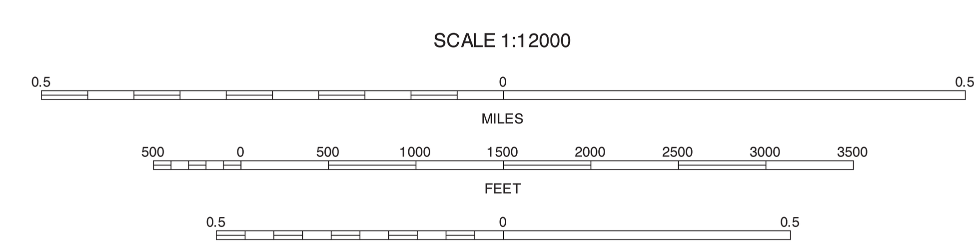
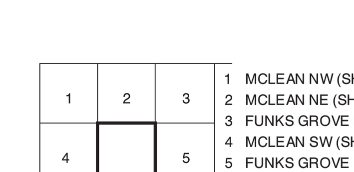
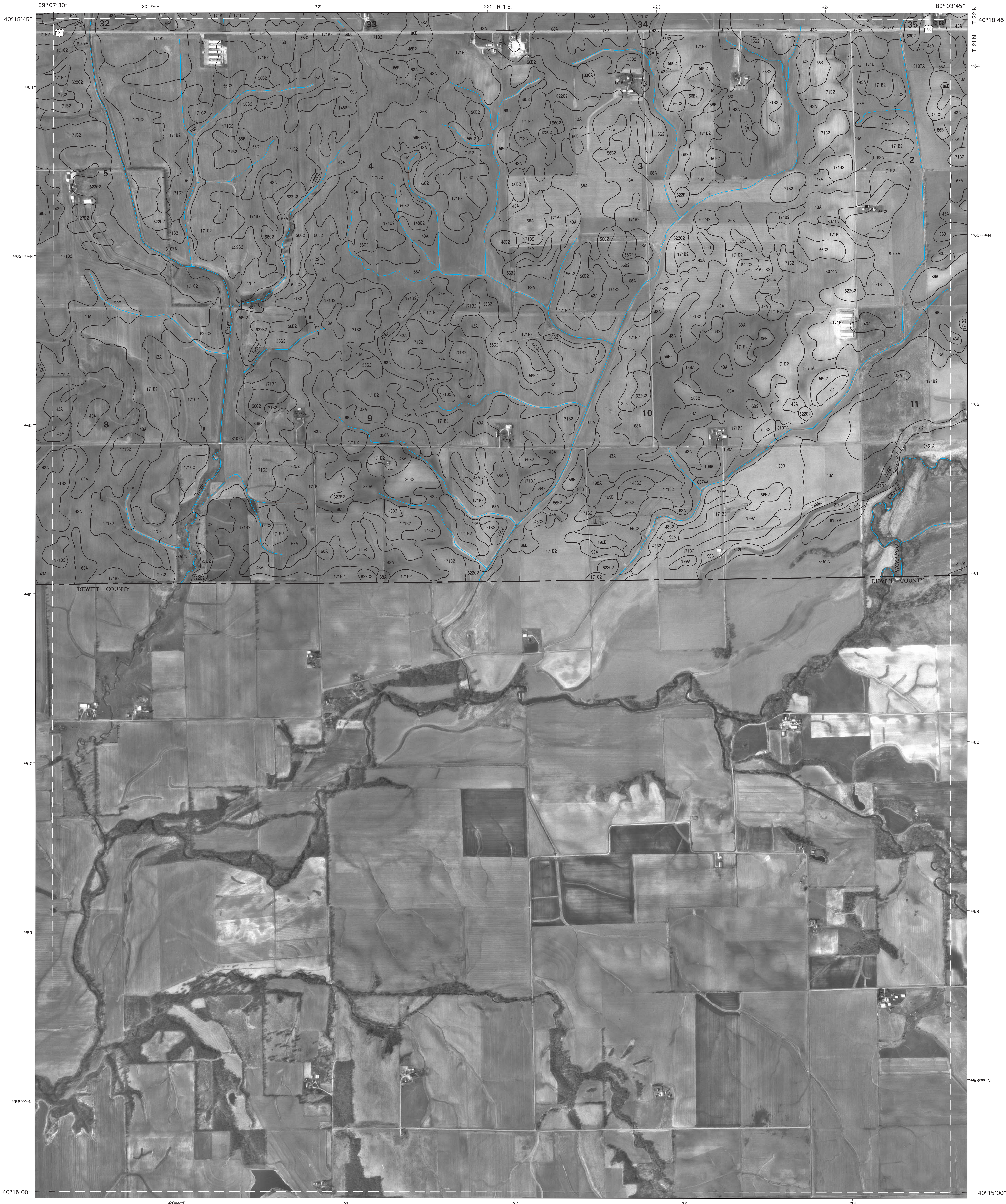






UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FUNKS GROVE SW QUADRANGLE
SHEET NUMBER 97 OF 107



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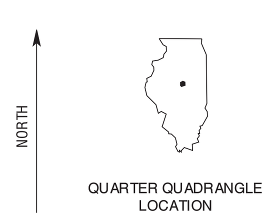
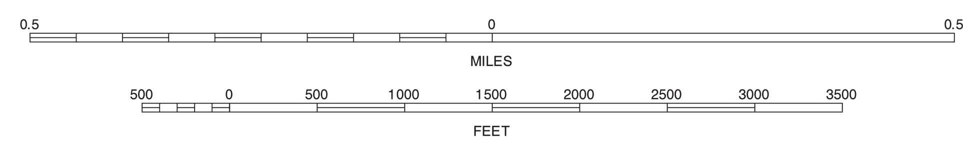


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



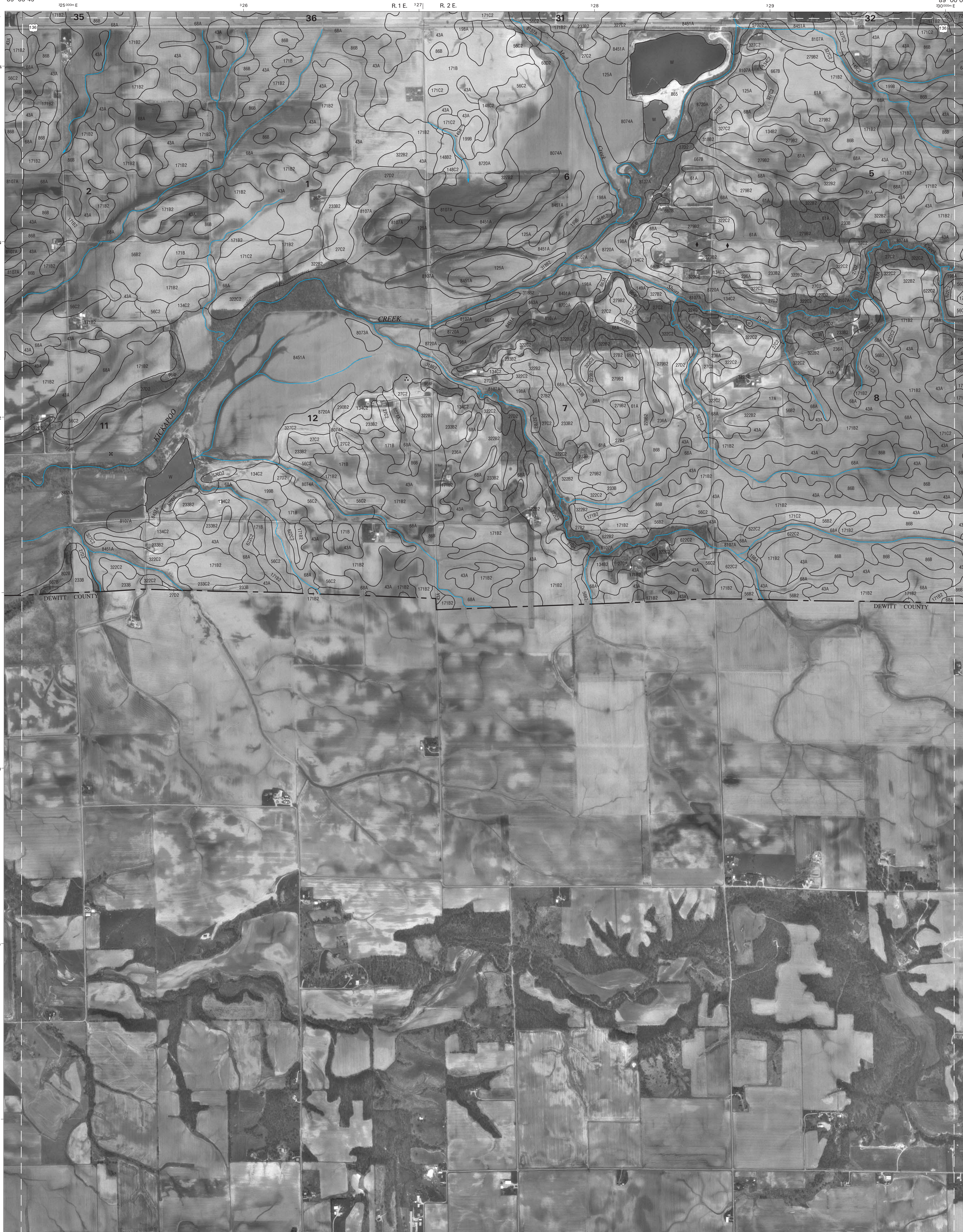
1	2	3	1 MCLEAN NE (SHEET 82)
4		5	2 FUNKS GROVE NW (SHEET 83)
6	7	8	3 FUNKS GROVE NE (SHEET 84)
			4 MCLEAN SE (SHEET 96)
			5 FUNKS GROVE SE (SHEET 98)
			6 WAYNESVILLE WEST NE
			7 WAYNESVILLE EAST NW
			8 WAYNESVILLE EAST NE

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 97 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FUNKS GROVE SE QUADRANGLE
SHEET NUMBER 98 OF 107



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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

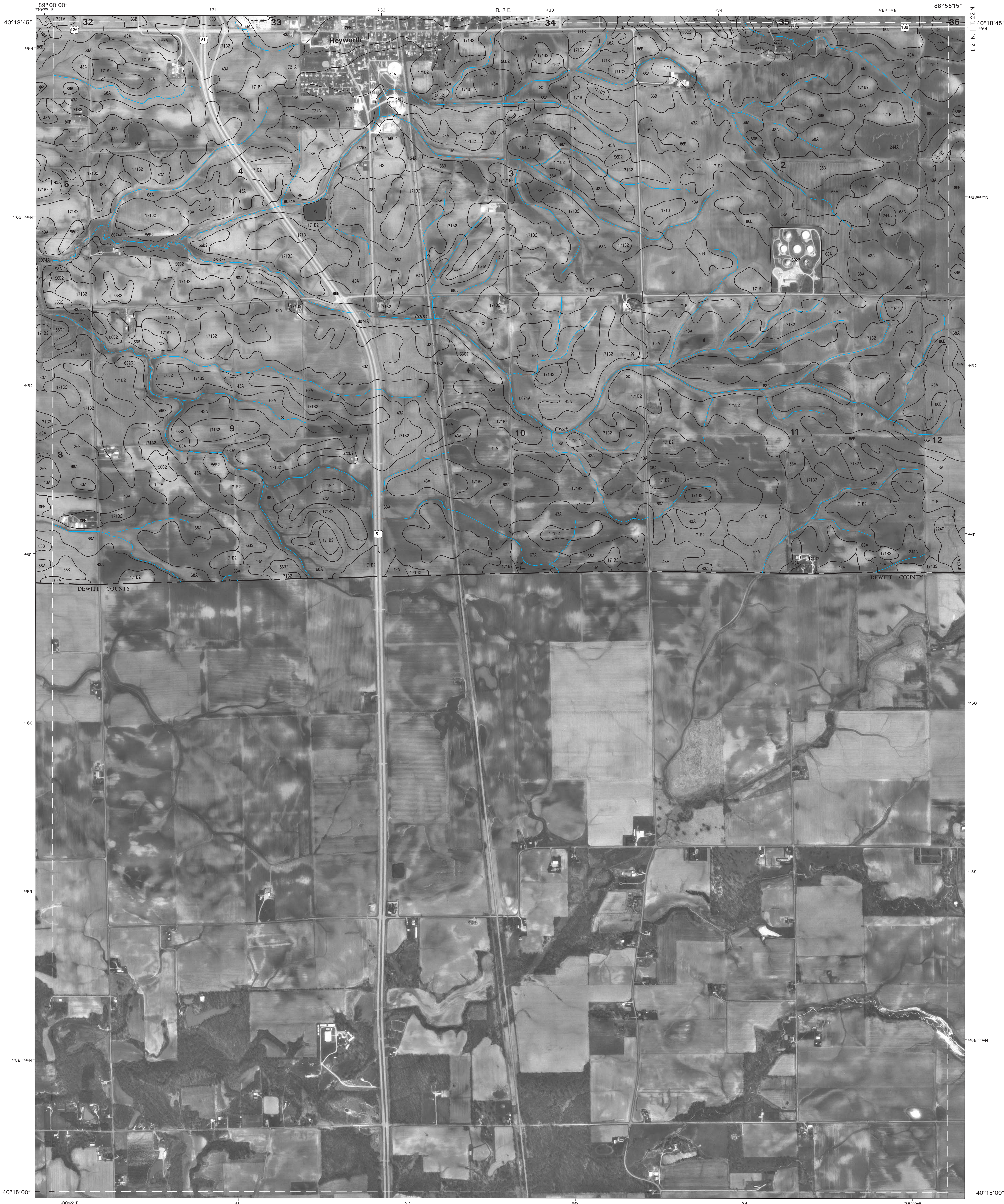
1 FUNKS GROVE NW (SHEET 83)
2 FUNKS GROVE NE (SHEET 84)
3 HEYWORTH NW (SHEET 85)
4 FUNKS GROVE SW (SHEET 97)
5 HEYWORTH SW (SHEET 99)
6 WAYNESVILLE EAST NW
7 WAYNESVILLE EAST NE
8 CLINTON NW

INDEX TO ADJOINING 3.75 MAPS

FUNKS GROVE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 98 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HEYWORTH SW QUADRANGLE
SHEET NUMBER 99 OF 107



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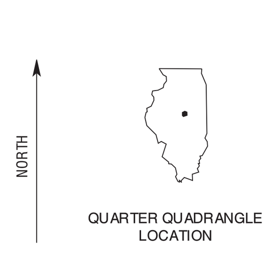
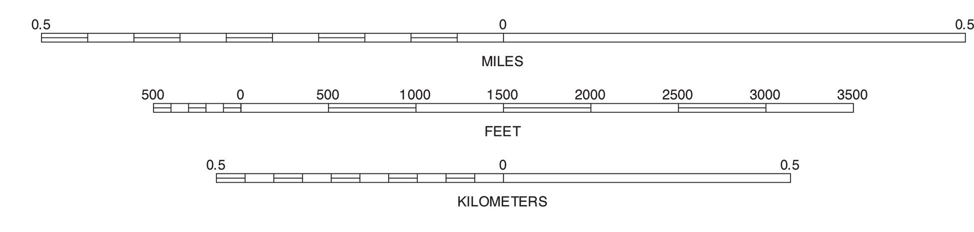


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 FUNKS GROVE NE (SHEET 84)
2 HEYWORTH NW (SHEET 85)
3 HEYWORTH NE (SHEET 86)
4 FUNKS GROVE SE (SHEET 98)
5 HEYWORTH SE (SHEET 100)
6 WAYNESVILLE EAST NE
7 CLINTON NW
8 CLINTON NE

INDEX TO ADJOINING 3.75 MAPS

HEYWORTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 99 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
HEYWORTH SE QUADRANGLE
SHEET NUMBER 100 OF 107

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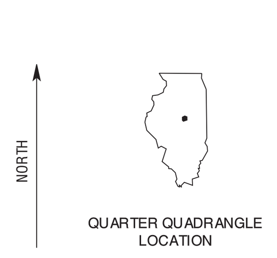
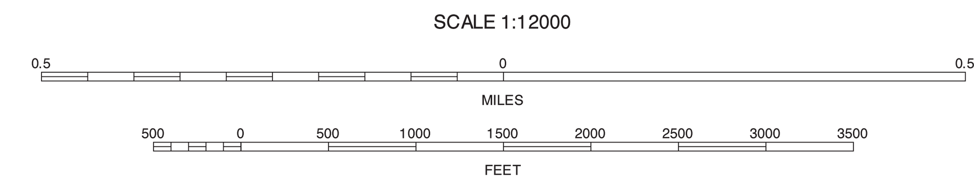


SCALE 1:12000



1	2	3
4		5
6	7	8

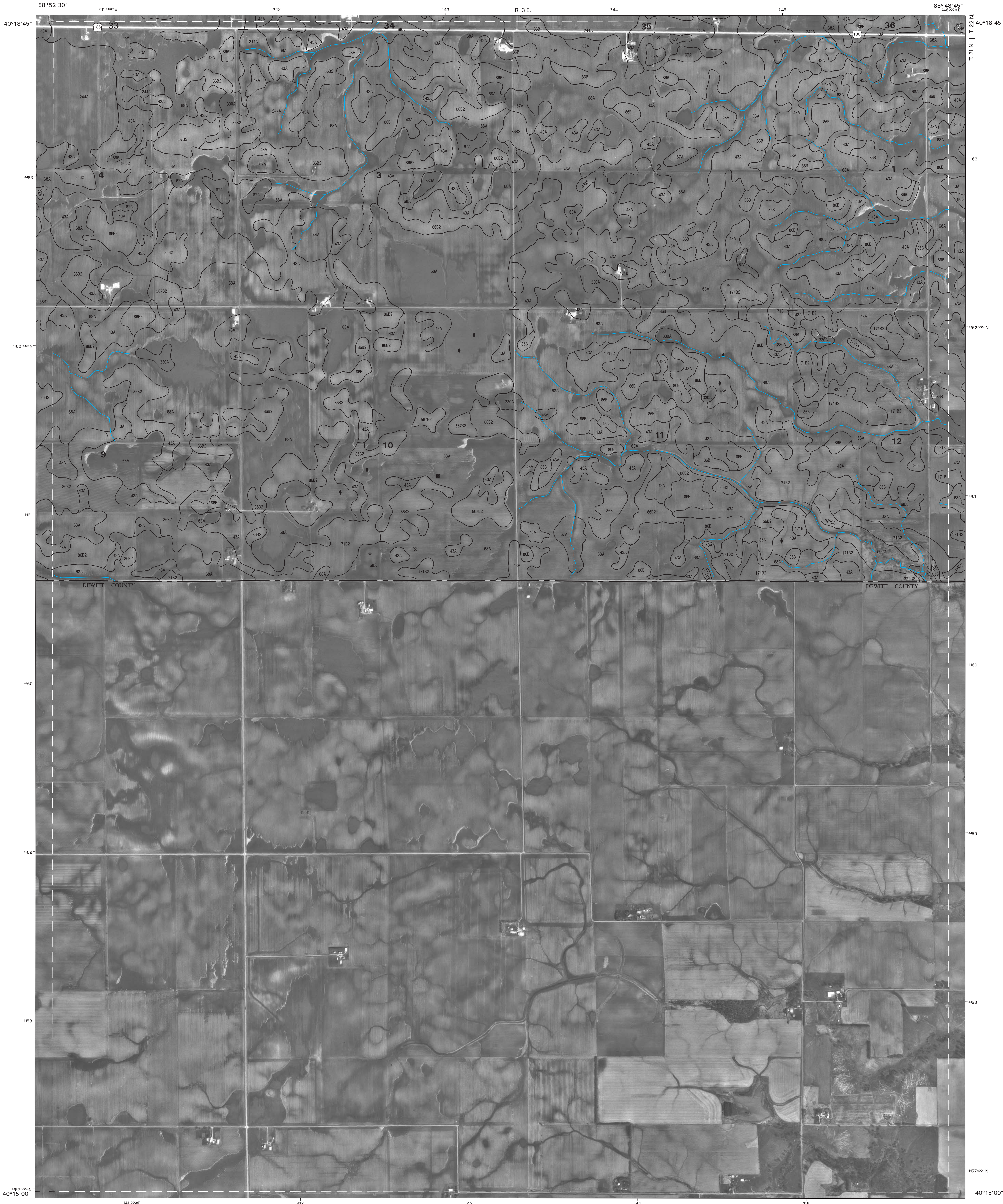
1 HEYWORTH NW (SHEET 85)
2 HEYWORTH NE (SHEET 86)
3 LE ROY NW (SHEET 87)
4 HEYWORTH SW (SHEET 99)
5 LE ROY SW (SHEET 101)
6 CLINTON NW
7 CLINTON NE
8 DE WITT NW

INDEX TO ADJOINING 3.75 MAPS

HEYWORTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 100 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LE ROY SW QUADRANGLE
SHEET NUMBER 101 OF 107



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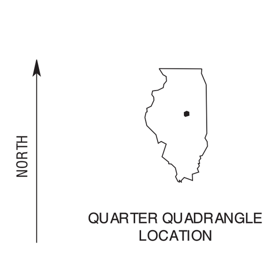


QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

1	2	3
4		5
6	7	8

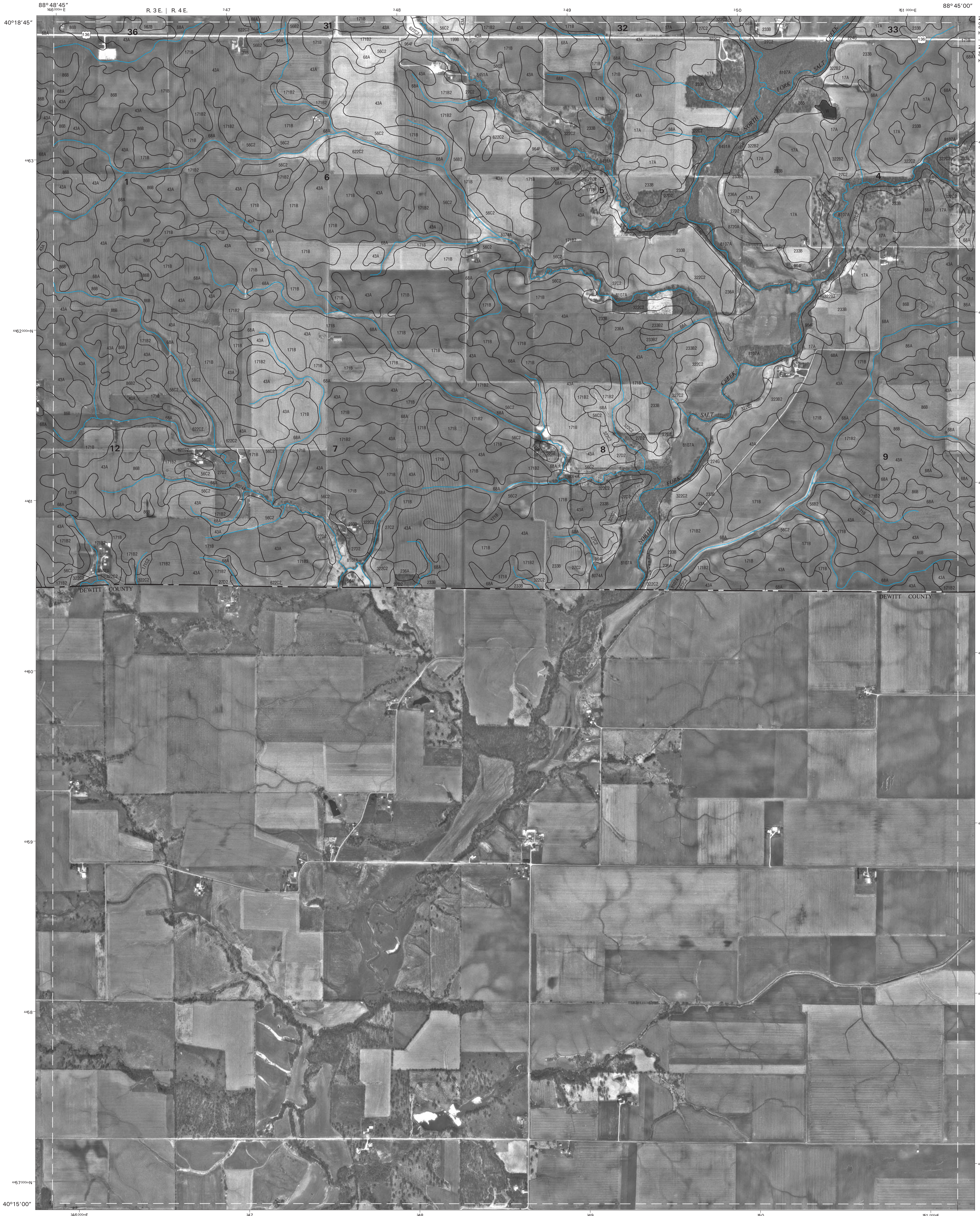
1 HEYWORTH NE (SHEET 86)
2 LE ROY NW (SHEET 87)
3 LE ROY NE (SHEET 88)
4 HEYWORTH SE (SHEET 100)
5 LE ROY SE (SHEET 102)
6 CLINTON NE
7 DE WITT NW
8 DE WITT NE

INDEX TO ADJOINING 3.75 MAPS

LE ROY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 101 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
LE ROY SE QUADRANGLE
SHEET NUMBER 102 OF 107



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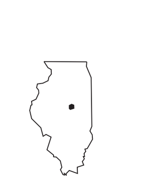
NORTH



QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 LE ROY NW (SHEET 87)
2 LE ROY NE (SHEET 88)
3 FARMER CITY NORTH NW (SHEET 89)
4 LE ROY SW (SHEET 101)
5 FARMER CITY NORTH SW (SHEET 103)
6 DE WITT NW
7 DE WITT NE
8 FARMER CITY SOUTH NW

INDEX TO ADJOINING 3.75 MAPS

LE ROY SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 102 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of the Interior, Geological Survey, from 1993-1995 aerial photography. Hydrography was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 3.75 MAPS

1 LE ROY NE (SHEET 88)
2 FARMER CITY NORTH NW (SHEET 89)
3 FARMER CITY NORTH NE (SHEET 90)
4 LE ROY SE (SHEET 102)
5 FARMER CITY NORTH SE (SHEET 104)
6 DE WITT NE
7 FARMER CITY SOUTH NW
8 FARMER CITY SOUTH NE

FARMER CITY NORTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 103 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FARMER CITY NORTH SE QUADRANGLE
SHEET NUMBER 104 OF 107

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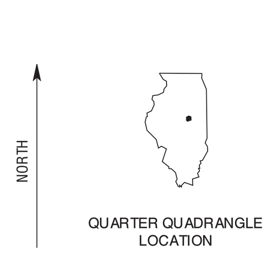

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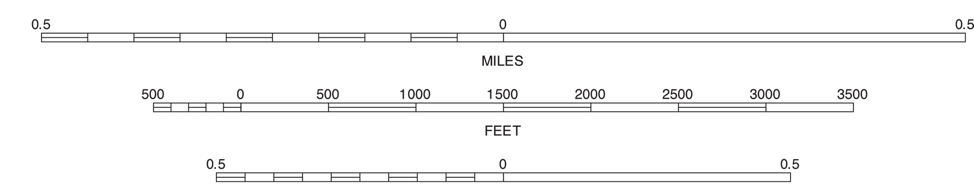


1	2	3
4		5
6	7	8

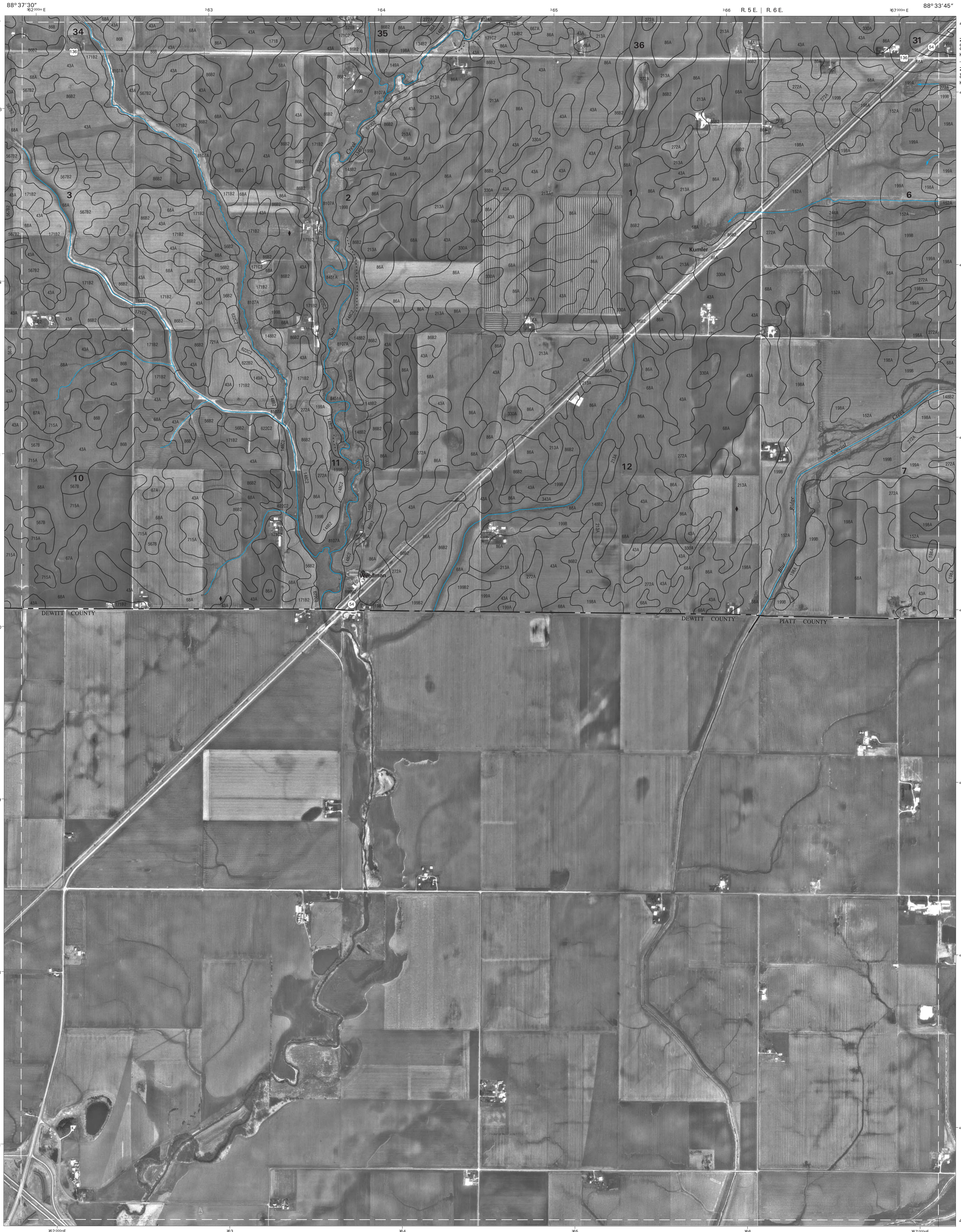
1 FARMER CITY NORTH NW (SHEET 89)
2 FARMER CITY NORTH NE (SHEET 90)
3 BELLFLOWER NW (SHEET 91)
4 FARMER CITY NORTH SW (SHEET 103)
5 BELLFLOWER SW (SHEET 105)
6 FARMER CITY SOUTH NW
7 FARMER CITY SOUTH NE
8 MANSFIELD NW

INDEX TO ADJOINING 3.75 MAPS

FARMER CITY NORTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 104 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BELLFLOWER SW QUADRANGLE
SHEET NUMBER 105 OF 107



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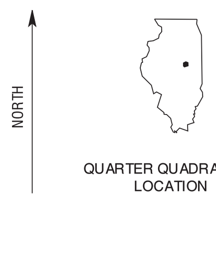

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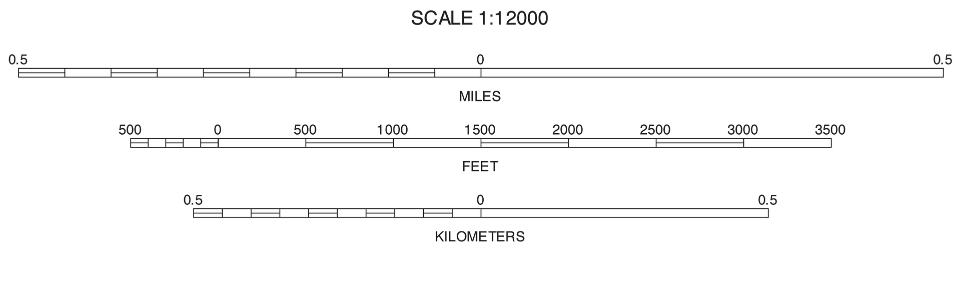
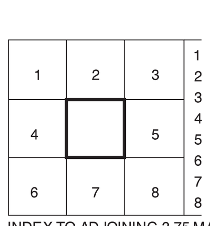




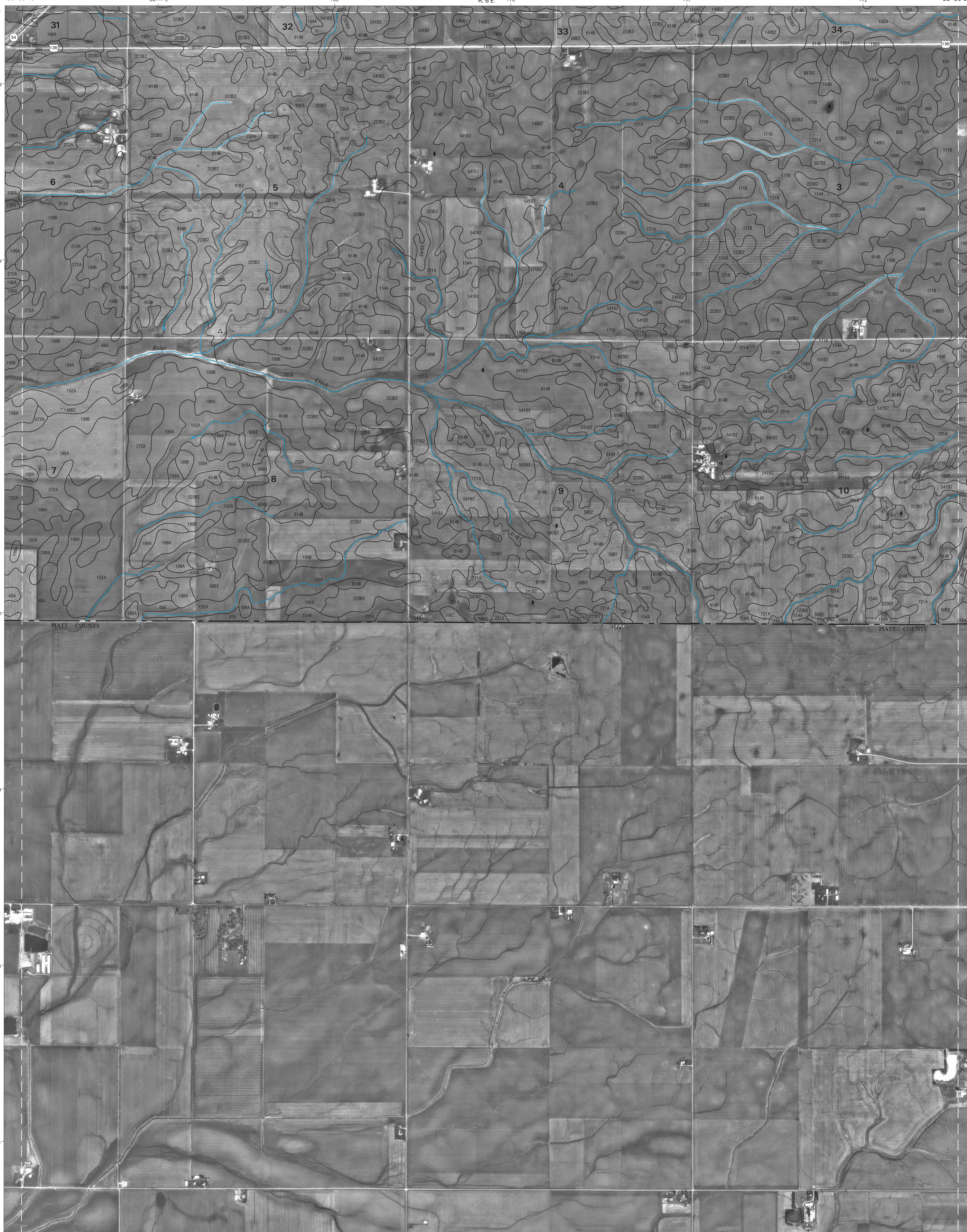
1 FARMER CITY NORTH NE (SHEET 90)
2 BELLFLOWER NW (SHEET 91)
3 BELLFLOWER NE (SHEET 92)
4 FARMER CITY NORTH SE (SHEET 104)
5 BELLFLOWER SE (SHEET 106)
6 FARMER CITY SOUTH NE
7 MANSFIELD NW
8 MANSFIELD NE

INDEX TO ADJOINING 3.75 MAPS

BELLFLOWER SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 105 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
BELLFLOWER SE QUADRANGLE
SHEET NUMBER 106 OF 107



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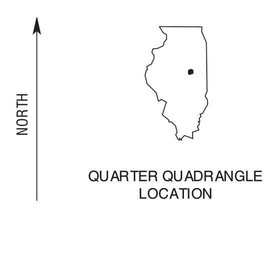
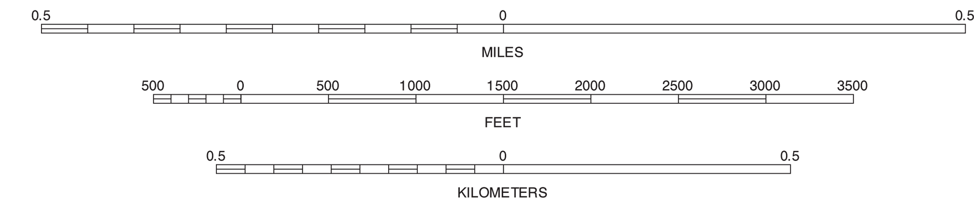


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 BELLFLOWER NW (SHEET 91)
2 BELLFLOWER NE (SHEET 92)
3 FOOSLAND NW (SHEET 93)
4 BELLFLOWER SW (SHEET 105)
5 FOOSLAND SW (SHEET 107)
6 MANSFIELD NW
7 MANSFIELD NE
8 MAHOMET NW

INDEX TO ADJOINING 3.75 MAPS

BELLFLOWER SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 106 OF 107

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MCLEAN COUNTY, ILLINOIS
FOOSLAND SW QUADRANGLE
SHEET NUMBER 107 OF 107

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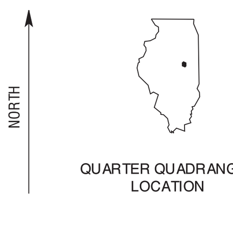

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 BELLFLOWER NE (SHEET 92)
2 FOOSLAND NW (SHEET 93)
3 FOOSLAND NE
4 BELLFLOWER SE (SHEET 106)
5 FOOSLAND SE
6 MANSFIELD NE
7 MAHOMET NW
8 MAHOMET NE

INDEX TO ADJOINING 3.75 MAPS

FOOSLAND SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 107 OF 107